HYGEIA

A JOURNAL OF INDIVIDUAL AND COMMUNITY HEALTH

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Health!

What Life Insurance Means to You
Can We Read Human Character?
Asthma - Deafness - Chicken Pox

April, 1925 *25 Cents*

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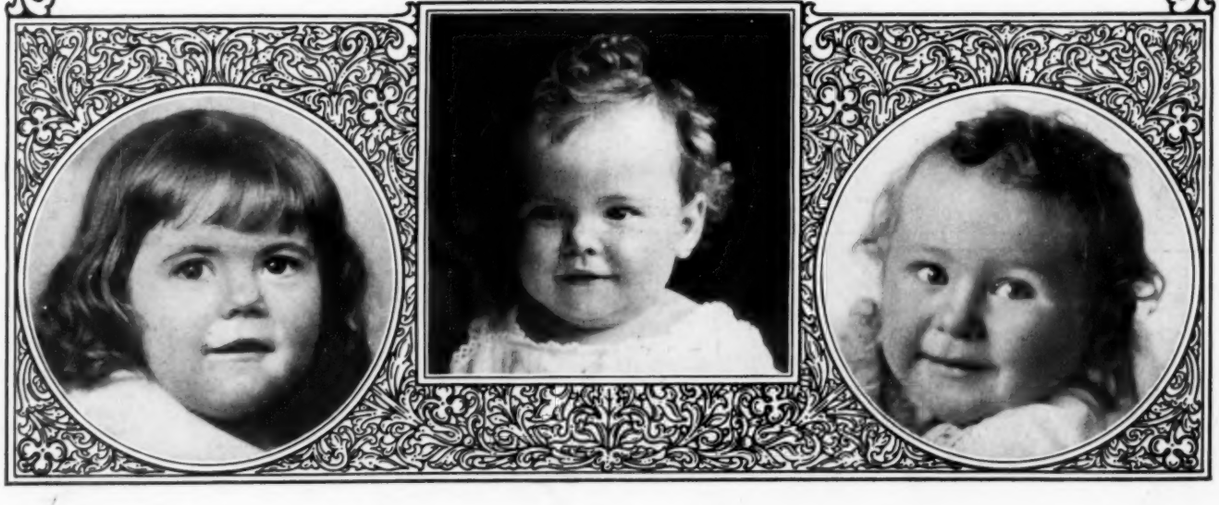

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A JOURNAL OF INDIVIDUAL AND COMMUNITY HEALTH

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APRIL CONTRIBUTORS

Accidents among Yellow Cab drivers in Chicago are said to have been reduced 34 per cent. since the drivers have been compelled to pass PROF. A. J. SNOW'S intelligence tests for automobile drivers. These tests rate the intelligence, caution and nervous reaction to emergencies of the driver. Professor Snow, a university research worker in psychology, has been called in by a number of large industrial concerns to give advice in selecting personnel.

DR. FRANK W. FOXWORTHY is editor of "Life Insurance Examinations" and associate editor of "Medical Insurance" and "Practical Medicine and Surgery." DR. D. F. SMILEY bears the title of medical adviser to the students of Cornell University.

As former president of the American Federation of Organizations for the Hard of Hearing, DR. HAROLD HAYS writes with authority on his subject. DR. LAWRENCE KOLB is a surgeon in the U. S. Public Health Service, being connected with the government hygienic laboratory.

WILLIAM MURRAY KERR is associated with the bureau of medicine and surgery of the Navy Department. The late ERNEST HAROLD BAYNES continues in this issue his campaign against the antivivisectionists; the HYGEIA series is one of his last pieces of writing. DR. JOHN RUHRÄH is a practicing physician in a large eastern city, giving special attention to contagious diseases of children.

LEE K. FRANKEL, Ph.D., is second vice president of the Metropolitan Life Insurance Company. DR. WILLIAM DUNCAN REID specializes in diseases of the heart. In DR. ARTHUR I. KENDALL'S story of the conquest of yellow fever appear two or three incidents hitherto unknown except to three or four persons. Dr. Kendall, now connected with a university medical school, lived through yellow fever days in Panama and was closely associated with General Gorgas in his great work of stamping out the disease.

THE MAY ISSUE

HOUSEHOLD INSECT PESTS AND HOW TO GET RID OF THEM.—*Prof. Louis Gershenfeld of the Philadelphia College of Pharmacy begins in the May issue a series of eight short articles on this subject.*

WHAT IS RHEUMATISM?—*Dr. Solomon Strouse of Chicago has prepared for* HYGEIA *readers one of the most practical and authoritative short articles yet written on rheumatism.*

GOOD HEALTH ELVES.—*A play for children by Bertha M. Parker of the University of Chicago. This is just the sort of play that elementary school teachers will want to wind up the year's courses in health and hygiene.*

Contributions to HYGEIA *are considered, and, if accepted, paid for. Stamps for the return of unaccepted manuscripts should be enclosed. All communications should be addressed to* HYGEIA, *535 North Dearborn Street, Chicago, Illinois.*

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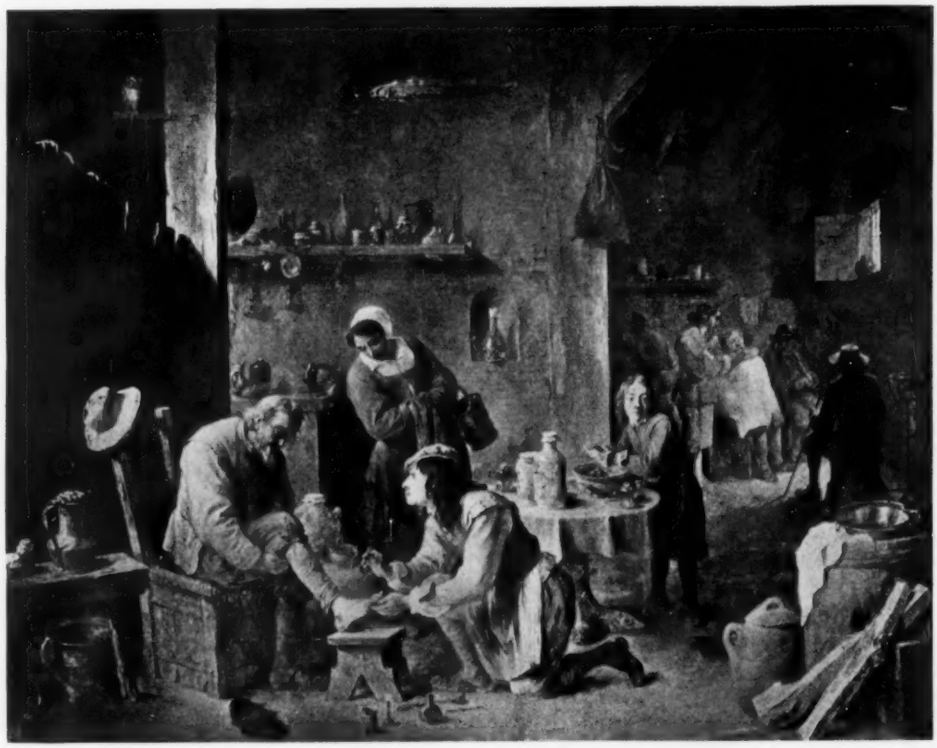


THE BARBER SURGEON

MINOR surgery was once carried on by the village barber, and Teniers in this eighteenth century painting depicts a Flemish barber shop of that period.

With our present knowledge of antisepsis, the general disorder and uncleanliness of the barber's operating room is horrifying. Patient and surgeon are in the foreground, while in the background is a journeyman barber at his work of shaving.

Can We Read Human Character?

A. J. SNOW

THE DAY of the old frock coated phrenologist who rented a vacant store and delivered lectures by the light of a gasoline torch, prior to giving "readings" of the human skull at $1 each, has passed, along with high wheeled bicycles, eggs at 10 cents a dozen, and popular interest in side whiskers.

He was a fake, and the people found him out. But in his place thrives the "character analyst," who occupies a permanent office in a metropolitan skyscraper, writes books (or has them written for him), advertises correspondence courses in the not-over-scrupulous magazines, and gets anywhere from $10 for an hour's conference to $150 for a "full course in mento-psycho-neurocultura, including complete instructions how to read the characters of others, bend them to your purposes through analyzing their natures, motives and desires at a glance, and attain success in life through utilizing the latent forces revealed by your own features, hair and skin."

"Character Reading" Is Profitable Business

The "character analyst and vocational adviser" does not much fancy the term phrenologist or physiognomist, but by the practice of something very similar to their arts he extracts hundreds of thousands of dollars annually not only from the gullible magazine reader, but from the hard headed business man. The former wants to learn how he can become a Napoleon of industry, commerce or art. The latter is ever ready to listen to any one who can help him with his labor problems.

Now phrenology may be defined as a "science" which professes to determine the quality of the mind by the external form of the skull. The "professor" of the middle 80's felt your bumps and told you what vocation to enter. Physiognomy, which is a kindred quackery, professes to reveal the character of the mind by the features. Vocational advisers and character analysts of the quack type today combine the two alleged sciences with a profit to their pocketbooks that would have turned the old empty-store faker green with envy.

Like perpetual motion, the philosopher's stone, witchcraft and gold from sea water, phrenology and physiognomy were once taken seriously by men of science. But it is now nearly a hundred years since these same scientists definitely and completely exploded the claims of both branches of pseudolearning. Then, as always happens, the quacks took them up.

How the Phrenologist Works

I suppose there will be few readers of this article who have not "had their bumps felt" or who do not know some one who has. The phrenologist ran his long fingers swiftly through their hair, asked quite a few apparently harmless questions, sized up their general appearance when they were not looking, and a day or so later gave them an impressive typewritten "reading," after collecting his fee. With physiognomists the process was much the same. It has not altered yet, except for the scenery and price charged.

Phrenologists have built their "science" upon the theory that the human traits, such as sound judgment, intellectual capacity, frankness, will power, ability to make friends, leadership, originality and impulsiveness occupy or control

Here are five men—all types. Can we size them up by the contours of their heads and their facial expressions? The character analysts say "Yes." Science says "No."

certain definite areas in the brain. They reason that if a man has strong will power the brain area where it resides will be greatly developed, and will bulge out the skull at that point. The same supposition is held with regard to the other traits. Hence they agree that if a man has several traits strongly developed his head will be covered with bumps of more or less prominence.

Physiognomists assert that the aforementioned traits exercise in some mysterious way an influence over the development of facial features. A favorite pastime with both is to observe the portraits of prominent statesmen and notorious criminals and point out by their arts just what combinations of bumps on the cranium, just what lengths of jaw and heights of forehead are responsible for the prominence or criminality the subject has attained.

What I have never seen any of them do is explain why unknown and unnotorious persons with characteristics the same as the prominent and the notorious have never attained to political office or the penitentiary. As a matter of fact they can't do it. Scientists themselves can't do it. Only, the scientists admit they can't, while the quacks mulct the gullible.

Thirty College Students Are "Analyzed"

One of the most recent exposés of both phrenology and physiognomy was performed recently by Glen U. Cleeton of the Carnegie Institute of Technology and F. B. Night of the University of Iowa, both earnest investigators who set out, not to combat the claims of these two "sciences," but to see if they could not find some foundation for them.

They selected two groups of women, numbering ten each, and one group of ten men. The women all belong to a national sorority, and the men to a national fraternity. By making such a selection it was possible to find many persons intimately acquainted from whom accurate information could be obtained as to actual traits.

These acquaintances numbered 201, and the first task was to get their opinions on the intelligence, frankness, will power, ability to make friends, leadership, originality and impulsiveness of the men and women under observation. Opinions were gathered and compared. They were found to agree very closely except in the cases of frankness and ability to make friends. Indications, on the whole, however, were that these aquaintances had the subjects sized up correctly.

Next a large number of business men, school teachers, employment managers and others used to meeting strangers and judging them were given a look at the subjects one at a time, and their impressions compared. Their opinions agreed well with each other, but were not identical with the estimates of those who really knew the men and women under observation.

Following this, "character analysis" was introduced. The investigators had spent great effort going over various advertised works on this subject and had abstracted therefrom all the data they could obtain about the determination of character by the shape and size of the skull, and the relative proportions of the features.

With anthropometric instruments they measured every conceivable dimension of the face and head and with great care computed the results according to the directions laid down in the books. They found among self-styled authorities on character analysis a great variety of opinion as to just what was indicated by different bulges, bumps, broadnesses and lengths. But they stuck to their tasks and finally arrived at a set of character judgments all worked out as directed.

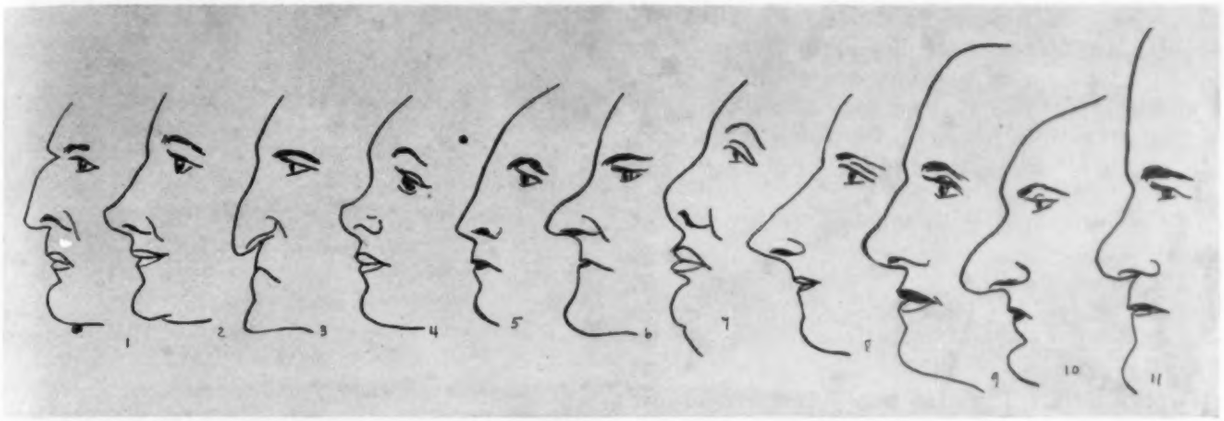
The net result was this: The judgments of the subjects' acquaintances (who, of course, had some real knowledge of the characteristics of the people in question) agreed with each other pretty closely. The judgments of the casual observers agreed with each other, but not with those of the acquaintances who really knew. The results worked out according to the character analysts' formulas agreed neither with each other nor with either of the first two groups. The investigators reached the conclusion that *there are no external characteristics of the face or head by which the character of a person may be judged.*

Claims Not Founded on Facts

As a matter of fact, the entire line of reasoning on which phrenology and physiognomy are based is faulty. The assumption that traits in themselves occupy certain areas in the brain and cause outward manifestations that influence the growth of the skull or features has never been verified by scientific investigation. The "character analysts," being anything but scientists, have never been able to prove it, either. In fact, there is no record that they have ever made a serious trial. They have failed repeatedly to respond to invitations to do so, and the "authorities" they cite are conveniently dead.

All we know about the brain is that certain portions of it seem to control the action of certain organs or muscles of the body. Injure one part of the brain, and the limbs on one side become paralyzed. Injure another part, and the injured person is blinded. Hurt another area and the heart is stopped. So with the lungs, the stomach and all other organs. But these organs are not traits; they are not character.

Furthermore, thousands of operations and dissections have proved beyond the slightest shadow of a doubt that nothing that goes on inside the brain has any effect on the growth or shape of the skull that covers it. The brain



Eleven noses challenge our ability to read human character. We can assign definite mental characteristics to the owner of each nose. But will we be correct in our analysis? Our guess is just as good as that of the "character reader and vocational adviser," the scientists tell us.

itself is enclosed in a tough parchment-like membrane without any protuberances where the so-called "areas" lie. Not only this, but it has been demonstrated again and again that during life the brain itself is in an almost liquid condition. Its physical nature is not such that it could bulge at any point and affect the bony growth of the protecting skull.

The stock answer of phrenologists, physiognomists and "character analysts" to the refutations of scientific investigators is: "Well, if our science is not sound, how can we get such wonderful results?"

As a matter of fact their results are wonderful only in the same sense that the tips of race track touts are accurate. If a man examines and advises a few thousand persons in the course of a year he cannot help guessing right a few times. If he makes sufficient capital of his correct guesses and says nothing about his mistakes, he soon convinces those who do not think deeply that there is something to his pretensions after all.

This same idea is carried out by his clients. Those for whom he guesses correctly advertise him all about. The others say nothing.

Analysts Are Shrewd Guessers

Also, an intelligent individual who examines thousands of persons—and the "analysts" have as much shrewdness as you'll find anywhere—learns to make pretty good guesses. Not only this, but by putting a few skilful questions he can learn much about a person's nature. Lastly, when his advice is finally given the client accepts it as authoritative, is inspired greatly, and puts forth extra effort to make it come true. Thus in a few cases the "character analyst" may achieve as great results as if his claims were really based on fact. But that good results can be obtained in more than a small percentage of cases, or that skill in correct guessing can be imparted by books and correspondence courses is absurd.

Among no class of people do the "character analysts" find more ready listeners than salesmen. If the traveling man could once learn to read character quickly and unfailingly, his batting average would go up like a skyrocket. So books on this subject and correspondence courses are filled with pictures of round-faced, thin-faced, hatchet-faced, dish-faced, high-browed, low-browed, hook-nosed, pug-nosed, light-skinned, dark-skinned, coarse and refined individuals, with appropriate instructions for approaching each variety.

According to one school of thought the plump faced man is supposed to be acquisitive and greedy—appeal to his grasping nature. Another authority asserts that the hooked-nosed man has executive ability—he will want to deal with you through subordinates. It is declared that the hatchet-faced man is quickwitted, but irritable—talk fast, and don't take up his time.

Bumps and Features Fail to Mark Idiot

Now it is true that one's habits and mode of living tend to leave their mark upon the face. But it is not true that one's mental condition is reflected there except in extreme cases. An idiot has no mental power or character, yet there are many idiots who cannot be distinguished by their facial appearance alone from men of high intelligence.

A moron has more "brains" than an idiot, without being by any means normal. Yet there are many morons who cannot be distinguished from normal persons except through tests conducted by skilled investigators. If there were anything to either phrenology or physiognomy the mental deficiencies of idiots, imbeciles and morons, with the exception of the Mongolian, would be revealed unfailingly in their skulls or the size and shape of their features. Yet one must observe their thoughts, actions and traits before it is possible in many cases to determine the state of their mentality. The head bumps and face measurements fail altogether.

Now the question arises quite naturally: If character analysts cannot be depended upon to advise us what jobs to take, or whom to hire, and if the information they give us with regard to sizing up others is not to be relied on, where shall we turn for trustworthy help on these matters?

Unfortunately the man who gives unpleasant counsel, even though it be true, usually gets less welcome than he who gives pleasant but fallacious advice. However, as I have no correspondence courses to sell, and do not give "character analyses" at so much per, I trust that I may be set down as being at least honest when I say that not a great deal of help can be given on any of the above mentioned problems except after long study, which usually entails considerable expense.

Simple psychological tests have been devised that measure one's mental alertness and capacity for handling ideas. Tests have also been worked out which measure one's mechanical ability. Partial tests have been devised to guage the ability to get along with others, but even the man who devised them does not claim much on their behalf. These last named tests are neither accurate nor thorough.

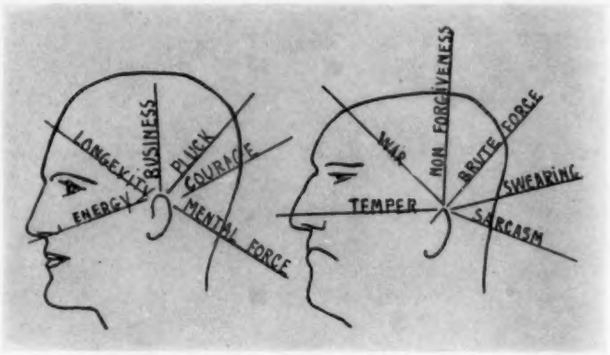
If an employer wants to hire a great many men to do a certain kind of work, it is possible by studying the work over a period of days, weeks or months to determine the qualifications necessary for it and work up tests that will measure the ability of applicants to perform the task in question.

Similarly, if a person is not satisfied with his occupation and desires advice on the best change to make, or if a youth needs guidance as to his future activities, it is possible for psychologists to test the individual for mental alertness, mechanical ability, etc., and to point out a number of occupations whose requirements correspond to the showings made by him.

It must not be imagined, however, that complete and exact advice can be given in this respect. The most that can be done honestly is to say: Your tests show that you have such and such qualifications, and that you lack such and such others. Here are a few lines of endeavor in which people of your makeup usually succeed, and here are some in which they usually fail. You would do well not to enter the latter.

Science Has a Few Tests

Up to the present, highly accurate tests have been worked out which show in a few moments whether an individual has the ability to succeed in typing, stenography, automobile driving, bank clerking, general office work, shop inspecting, and a few other occupations of similar importance. Psychology has not progressed much beyond this point, although new tests are constantly being developed and perfected.



How energy radiates from the ear, according to the magazine "Character Reading," from which all the illustrations for this article are taken. "When the intellect and top head are low the energy uses itself in temper, sarcasm, profanity and brute force; when the intellect and top head are high, this same energy directs the higher faculties to great good and force," says the magazine. It sounds all right, but does not happen to be true. Persons who resemble each other in every particular often reveal widely different characters.

Despite the fact that one's ability to succeed can be measured, it is not possible to tell whether the subject has the application, will power and interest actually to make good in the line of endeavor. Psychology, as practiced by scientists in the universities, has not by any means reached the point where it can do all the things which the phrenological, physiognomical and analytical quacks claim they can do. But what little psychologists do know is based on demonstrated facts, not on the guesswork of charlatans.

None of the above mentioned tests gives heed to the cranial bumps or the proportions of the face. They have been formulated from observations of nervous and mental reactions under various conditions. They have been challenged and proved again and again. They have been performed repeatedly under adverse circumstances and have silenced critics. The man of science, unlike the "character analyst," the phrenologist and the physiognomist is ever willing to present his proof before responsible juries, whether they are friendly or hostile. He never dodges such tests, as do they. When he reaches the present limitations of his science, he says so.

All this presents but cold comfort to the man or woman who earnestly seeks vocational guidance, and has read the advertisements with a hopeful heart. It is not particularly welcome news to the business man who has been planning to seek the aid of a "vocational expert" in reducing his labor turnover. Nor will it be welcome information to those who vitally need the ability to judge the character of others, and had hoped a correspondence course would turn the trick for them.

What Life Insurance Means to You

FRANK W. FOXWORTHY

THE cave man carried his own insurance. The Big Stick, his brawny right arm and his wits were the first insurance policies. Then, as now, protection was the essential thought.

A little later protection of the many as well as the few was shown when Pharaoh insured the Egyptians against famine by having Joseph store up corn during the seven prosperous years to be doled out during the seven lean years. This was probably the first annuity that the world had ever seen, the whole amount of the insurance being paid the beneficiary in instalments.

Instead of food insurance, people learned it was easier to carry the risk by using that which buys food—some form of money. Later, guilds, friendly societies and fraternal organizations preceded the formation of the modern insurance company.

People die at certain definite predetermined rates. A man at 80 years does not expect to live as long as a man of 30. Yet a man 30 years old, from disease or other causes, may have arteries and other organs as old as the man of 80. Some form of physical examination is necessary to determine the age of the arteries. The insurance examination blank is prepared to show that.

First Must Prove That You Are You

The first questions are usually regarding identity—a necessity. Many questions on the medical blank are designed to tell the company that it is *you* who has died; and *you* want to know that the company pays the person you are trying to protect.

Many a man who has been officially dead has turned up alive. On this account it is necessary for the insurance company, first, to have the exact date of your birth. Sometimes this is not accurately known, and in some states better records are kept of hogs and cattle than of human lives. Recently the exact day and month of a man's birth was determined by the date of the farrowing of a fine litter of pigs, which had produced a greater impression on the farmer than the birth of his son. Several accessory questions are added to the date of birth, such as race and nationality, as several persons may have identically the same name.

Identity is further determined by scars and birth-marks. Often such a small thing as the filling of one tooth has been known to identify a person after a wreck, thereby facilitating the payment of the insurance policy. Further questions in regard to whether the applicant is single, married or widowed may assist in his identification.

Habits are usually questioned carefully, as the company knows that a habit once started is easily continued and hard to break. Questions in regard to the use of alcoholic stimulants are obsolete. If the applicant is an abstainer they are not necessary. If he is a consumer of stimulants he probably will not so inform the examiner. The same may be said in regard to the use of various habit-forming drugs.

Must Know of Previous Illnesses

The health of the insured is asked for in detail, because many diseases have a continuing action on the human body and one attack presupposes more and even severer attacks. The individual with recurring attacks of disease of the gallbladder or appendix is of course not as good a risk as one who has never had any of these ills, or one who has suffered with them and has had the cause removed.

Our present knowledge of focal infections in the teeth, tonsils and sinuses teaches us that it is often necessary to remove an organ at some distance from the point at which the explosion occurred. The bacteria that cause an acute attack of appendicitis may be breeding in a diseased tonsil.

The name and address of the physician consulted during an illness is asked on the insurance blank, not necessarily for purposes of correspondence, but so that the insurance company may learn whether the applicant has had the services of a physician. Through this it is known that if his ills should return he will probably again seek the advice of a physician.

The questions in regard to stay at hospitals, sanitariums or asylums are also necessary to show whether the applicant has had the best of treatment; if the sanitarium has been one for the treatment of nervous diseases, the answer may show that some mental disease has existed and may even now be present.

Dishonest agents and careless doctors have allowed policies to be issued to elderly women as substitutes for other women who were fatally ill. I have known several of these women whose names appeared on life insurance policies and who, when questioned, denied that they had ever been examined.

The prevalence of the venereal diseases in this country makes it a necessity to have several questions in regard to them. All of these diseases are highly infectious and many infections of this character are innocently acquired. Spe-

cialists inform us that these diseases are rarely entirely cured and may produce disabilities many years after infection and apparent cure. Of course any misstatement of facts would invalidate the insurance; consequently it is necessary to go into each case very carefully.

Family Records Are Important

Family records are given more or less prominence in each examination blank as it is necessary to learn whether the family is long-lived. A long-lived family is apt to produce children of the same character; this history alone might reduce the premium on a policy.

The year of death of members of the family is often asked merely to learn if there has been any exposure to recent infectious disease, such as tuberculosis. The cause of death is also important, as quite often mistakes are made and the report made by the physician who attended the patient in the last illness may cause trouble in the payment of the insurance.

Recently an executive of a large company was found dead in an alley immediately beneath his office window. If he committed suicide his widow would lose a large amount of insurance. If he was killed accidentally it would be saved to her. Extreme care in the investigation of this case showed that the ledge of the window was quite low, that he was accustomed to have his window open and, if the room were too hot, that he frequently leaned out of the window to get fresh air. These little details meant thousands of dollars to his widow, as the coroner pronounced the cause of death as accidental.

The length of time of the last illness of a member of the family is almost always asked, for it would be foolish to find the cause of death given as pneumonia, and the length of the illness given as two years. If the applicant had taken care of a member of the family who had thus suffered, the risk from pneumonia, a disease of short duration, would be much less than the risk from tuberculosis, which might extend over two years.

Insanity, epilepsy and suicide are often asked about, in addition to tuberculosis, as it is known that insanity and epilepsy often run in families and very often there is a predisposition to suicide when several members of the family have so ended their lives.

All of these troubles tend to produce termination of the insurance before the predetermined rate, and if any company takes too many of these risks on its books without proper premiums, the cost of insurance will be thereby increased to the rest of its policyholders.

From the time that life insurance has been written, woman has been given a place of her own in regard to acceptability for insurance. Many years ago it was thought that a doctor's wife, especially the wife of a doctor who did his own dispensing, was a very poor risk, as she had access to many kinds of medicine and probably did not have the knowledge of her husband to guide her in their administration.

A physician's wife, while her husband was away from home, was asked for a throat gargle. She took down the usual bottle and dispensed some of its contents. The patient remarked that it certainly was the strongest gargle she ever had taken—it had a terrible "kick" to it—but it cured her sore throat.

Upon his return, the physician was horrified to find that a colored servant had taken the empty gargle bottle and filled it with furniture polish, which happened to be exactly the same color as the gargle. Fortunately, investigation showed that the manufacturer had put nothing in his furniture polish that would cause death.

Women Usually Good Risks

Later researches, however, have shown that women as a whole are excellent risks, even better in some cases than men, excepting of course in their own peculiar diseases. Careful questioning is often used to determine why a woman wishes insurance, whether she has some one dependent upon her for support, or is engaged in some business transaction that needs protection. This has been caused by the fact that many times a woman has been compelled to take out insurance made payable to the husband, who later murdered his wife to get the insurance money.

In one such case recently a woman was found dead with a chloroform bottle in her hand, and while it was proved afterwards that she had been an inmate of an insane hospital (which invalidated the insurance), yet it was also proved that she had no one dependent on her for support, and that the husband had insisted on her taking out ten times more insurance than she reasonably could carry, all payable to him. Unfortunately, the husband skipped the country before the hands of the law could reach him.

This also accounts for the fact that when the wife is taking out insurance there are usually several questions asked in regard to the husband; the company wants especially to know whether he has provided for her welfare as well as his own.

All of the answers on the blank are verified by the signature of the applicant, who is usually identified by the medical examiner as a witness. The responsibility of physical examination is placed on the shoulders of the medical examiner; no matter what statement the applicant has made to him in the first part of the blank, he alone is responsible for the second part and his signature makes the statements true.

The physician is usually asked to tell how he knows that the right person is being examined and whether he notices any special physical defects, deformities or impairments, such as of sight, hearing or enlarged glands.

Questions in regard to height and weight are asked with exceeding exactness. These may seem superfluous, yet it is known that, all things considered, the man who is six feet five inches tall is apt to stoop over at his desk or in walking, in order to appear shorter. This contracts his chest, and statistics show that he is not apt to live as long as the man of normal height. The man of five feet two inches, with a weight of over 200 pounds, is likewise not as good a risk, since he is more apt to have trouble with heart and arteries.

Sometimes the applicant's temperature is taken, as many times persons are sick and have not realized it. A number of applicants have been put to bed for illnesses determined by results of physical examinations required for life insurance. This occurs repeatedly in cases of persons who request a yearly health examination, such as most companies give to their policyholders. There is no telling how many lives have been saved by these yearly examinations.

Knowledge of the importance of blood pressure, as an index of the condition of the arteries, has developed remarkably in recent years, and now every blank has a space for this test. It is as necessary in determining the onset of disease as an examination of heart or lungs. Many fatal diseases are discovered in the early stages by examination of the kidneys, and fortunately false modesty no longer causes much opposition to making a complete urinalysis. The importance of this test is understood so thoroughly by specialists in insurance that enormous laboratories have been fitted up by many companies for such analyses. These examinations are usually made free to policyholders who apply for periodic health examinations.

Periodic health examinations are one of the greatest by-products of life insurance work. They give the policyholder an opportunity to learn periodically the condition of his health, and thereby enable him to live a longer and happier life.

What to Do for "Sick Headache"

SICK HEADACHE, scientifically known as migraine, causes more discomfort, more days in bed, more failures to keep social engagements, than almost any other of the lesser complaints. Women are more given to sick headaches than men; city women have them more frequently than their rural sisters.

Indeed, sick headache is usually a family complaint; it is inherited and is perhaps the result of faulty hygiene throughout many generations.

The headaches usually begin in childhood, occur on an average of once a month, and usually decrease in severity and frequency after the age of forty years. There are, however, a great many atypical cases that do not conform to the rules mentioned.

The disease, being hereditary, is really part of a person's makeup, at least the tendency to it is, and all we can do is to try to find the factors that tend to bring on the attacks and then try to combat them.

We know that people who lead largely an outdoor life, get regular sleep, exercise and meals, who work and play at regular hours, who avoid fatigue as well as idleness—in short persons who from childhood have had proper habit training—are not likely to be seriously troubled by migraine even if there is a family tendency to it.

Proper living, though instituted later in life, will often cause the headaches to be fewer and milder. In a general way, migraine victims should eat little meat, eat plenty of vegetables and fruit, drink milk, cream, and even olive oil, and then exercise sufficiently to keep from getting fat.

There is a relationship between migraine and other periodic affections, like hay-fever, asthma and hives. Attacks of any of these diseases may be brought on in susceptible individuals by trivial causes. Every little disorder in such persons should be remedied, if possible. Proper glasses should be worn when there is an error of refraction and nasal catarrh or disease of the tonsils should be treated.

The least important measures relate to the treatment of the attacks themselves. In some persons, but not nearly all, they can be cut short by taking, at the very onset, a dose of a sedative which a physician may safely prescribe.

Coal tar remedies may relieve the pain for the time, but it is better to avoid them as they tend to cause the attacks to be more frequent and prolonged and to undermine the general health.

Movies are bad for two reasons: the effect on the eyes, which usually are sensitive, and the breathing of stuffy air.

Migraine victims are also peculiarly liable to be carsick and seasick. Walking and horseback riding are the best means of transportation for them.

The Big Muscle Boys

The Apotheosis of Brawn as a Goal of Health

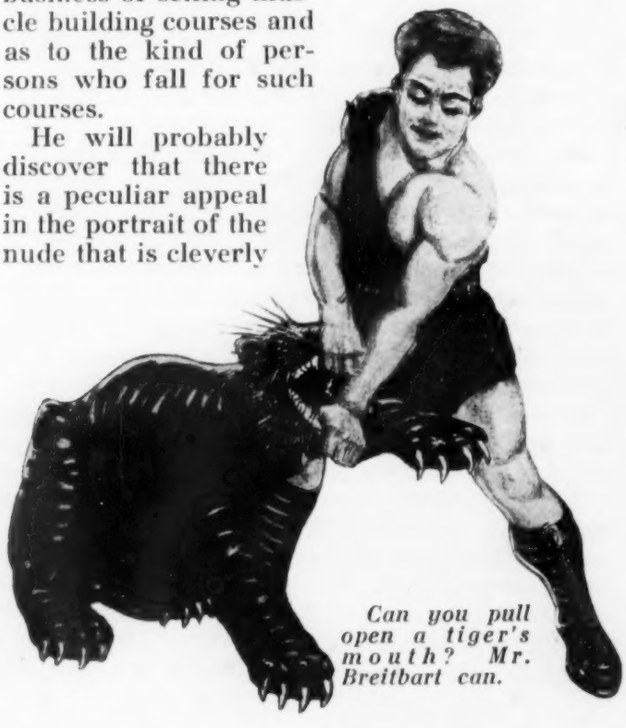
TURNING the pages of a periodical like *Physical Culture,* one might become impressed with the notion that the chief goal of man is muscle. Not that the "Bare Torso King" neglects the mind, for in the Macfadden string of periodicals was one known as *National Brain Power.*

But most of the great gospel is the lauding of strength both as a means and an end—of strength for strength's sake. And not just ordinary strength, but the kind of strength that bends crowbars between the teeth, bites chains in two, lifts a team of horses and carries five or six men posed in artistic designs, while giving huge grunts to the accompaniment of an orchestra.

Once upon a time there was only one "Bare Torso King," the pictures of whose powerful frame thrilled the multitude as he appeared clad only in a breech clout, with fists clenched and gorilla-like chest pumped out like that of a pouter pigeon. But nowadays, as one turns the pages, he comes upon coupon after coupon, inviting him to subscribe, urging him to inquire, pleading with him to be strong.

As the reader scans the advertising literature and the other material that he receives when he sends the coupon, he will observe a remarkable sameness. He will derive from his observations certain fundamental opinions as to why the exponents of muscularity are engaged in the business of selling muscle building courses and as to the kind of persons who fall for such courses.

He will probably discover that there is a peculiar appeal in the portrait of the nude that is cleverly worked on by the bare-torso gentlemen to secure their clients. He will find, no doubt, that these gentlemen are not suffering inordinately from modesty as to their own accomplishments, and he will probably become convinced that their business is one that is profitable.



Can you pull open a tiger's mouth? Mr. Breitbart can.

Let us first glance over a few of the leaders in this unique occupation.

Introducing L. W. Albizu

Consider first Prof. L. W. Albizu. He is the inventor of the Roller Dumb-Bells—"The World's Quickest Way to Strength." He has a system; in fact, each of the bare-torso gentlemen has a system, and Professor Albizu admits in connection with the exploitation of his system that he is "the sensation of the physical culture world."

Apparently all that you have to do to become strong by the professor's method is to roll his dumb-bells up and down the wall. He does not give you a diploma, and he emphasizes this fact because some of the big muscle men do give you a diploma. Professor Albizu gives you a health and strength course at $20 cash or $22 on time, and, with it, you get a pair of dumb-bells.

Of course, he has a question blank, because mail-order physical culture, these gentlemen all carefully explain, can only be properly conducted on those who are sufficiently healthful to stand the rigors of the exercise. Still it is advertised to make the weak man strong. But Professor Albizu is not unduly curious. Chiefly, he wants to know your measurements, if you have ruptures, if your neck is short or long, and if your collar bone shows when you stand naturally.

Introducing Charles Atlas

Alphabetically we come to Charles Atlas. Somehow Atlas is such a good name for a strong man that one hesitates to believe it a real one; but maybe it is.

Atlas occupies almost a page with his advertisement in *Physical Culture.* He offers "Health—Dominating, Wealth-Winning Health." He emphasizes "Big Powerful Muscles," and he tells you that Atlas-trained men are "Personality" men. "My system," says Mr. Atlas, "is the last word in Health and Energy Building." "I give only actual instructions, high-powered secrets [All of these mail-order Samsons have secrets. —Ed.] that do get the quick and certain results. And who could be Better qualified to teach you these amazing secrets than the World's Most

Perfect Man." Curiously, each of these bare-torso gentlemen is the world's most perfect man.

So you clip the coupon and send for "Secrets of Muscular Power and Beauty." It's free—absolutely free. "Scores upon scores of vital, inspiring pages of information and beautiful art pictures yours FREE." [All of these bare-torso gentlemen emphasize the beautiful art pictures that are free.—ED.] We will not try to duplicate the different kinds and sizes of type that an Atlas advertisement uses; our printers might object. But besides the type, there is a little insert that tells you about your chances to get free "seven large photographs of myself" as well as "cash prizes, expensive trophies and beautiful diplomas." Where is the farmer's boy or the dry goods clerk that could resist an appeal like that?

The reader sends the coupon and the Atlas book comes. A letter comes also with more capital letters than a Hearst editorial. Charles Atlas tells you in the mimeographed personal letter that he himself is full of "boundless energy," "great power," "wonderful strength," and "radiant, vibrant health." He is glad "for your sake" that he has it and can transmit it to you. No apparatus is required. He pleads with you to send $30 cash or $35 on time in payments for his course. To prove to you how good he is, he encloses some circulars showing four or five other gentlemen with clenched fists, puffed out chests and breech clouts, breaking up iron chains and posing for Ajax defying the lightning. These bare-torso gentlemen, it seems, are graduates of Mr. Atlas' course. And ah! how Mr. Atlas pleads with you in connection with each of these photographs. Indeed, he rises at last to these heights of beautiful sentimentalism:

> WHAT WILL THEY THINK OF YOU?
>
> Your sweetheart—you know what kind of a man she expects you to be. Are you going to disappoint her? Will you let all her dreams about her lover fall to the ground? She wants you to be a virile, manly man, full of strength and power, able to protect her. Your mother—she expected great things of you. She hoped you'd grow up a splendid example of vigorous manhood. Don't let her hopes of you be shattered. Resolve now to make something of yourself. Refuse to be a weakling. Health and strength can now be yours.

The confidential question blank with the questions compiled by Mr. Atlas, or his advertising agent, seems to be calculated particularly to appeal to the psycho-asthenic and hypochondriac.

Mr. Atlas wants to know, among other things, if you are "nervous or fearful?" "Despondent, angry, worry, irritable at times?" [Who isn't?—ED.] "Have you any harmful habits you wish to overcome?" [This is the old appeal, based on ancient beliefs as to the dangers of certain sexual habits.—ED.] "Is your will power weak or strong?" "Are you sexually weak?" "Are you timid, shy, bashful?" And so on and so on!

And then, "If you really crave Super Power, Glorious Health, Uncanny Strength, Tremendous Nerve Force and a Perfectly Developed Body Mail This Enrollment Blank Right Now."

So much for Mr. Atlas!

> THIS is the first of two articles about the methods used by those who are exploiting big muscle development for commercial gain.
>
> This article deals with the "big muscle boys" in alphabetical order from A through L. The article in the May issue will expose the methods used by those in the M through Z classification. Some have methods that are different but all emphasize the beautiful pictures, the apparatus, and above all—the secrets.
>
> Future articles will give constructive advice as to muscle development, and the value of weights, dumb-bells and apparatus in building up the muscular system.

Introducing Mr. Breitbart

Mr. Breitbart, ladies and gentlemen! He has learned "not only the wonder of being strong but the *secrets*—the knack—of acquiring tremendous strength." In fact, his system has given him "such marvelous strength that people refer to me as the Superman of the Ages."

We warned you, reader, that these bemuscled gentlemen were in no sense to be compared with the modest violet. But Mr. Breitbart shames the chrysanthemum or the rhododendron:

> There is nothing else like my method and there is nothing else that will as quickly or surely give you the big, bulging muscles and crushing strength that every red-blooded man wants.
>
> See what I have been able to accomplish myself, by the use of this system. I support more weight than any other man. I drive heavy nails through many layers of oak and iron with my bare hands. My muscles are trained. I am able to bend heavy steel bars into carefully worked designs. I perform feats of strength that astonish thousands with the sheer power of muscle that my system has given me; and this same method can give the same power to you.

Like Mr. Atlas, Mr. Breitbart has secrets; he not only has his own secrets, but he admits that he knows everybody else's secrets. And he continues "mine is a new and far better method, unlike any you have ever seen or heard."

All you need to do is to send for Mr. Breitbart's new book. He has been offered real money for this book, he tells you, but he is willing to give it to you for a dime to cover the

cost of mailing. Send him a dime at once, and you will get not only his book but also "Breitbart's Muscle Meter" FREE.

As can be imagined, for your dime you get quite a package. You get first Mr. Breitbart's book entitled "Muscular Power," showing on its cover Mr. Breitbart in the act of pulling open a tiger's mouth. Now that's the kind of accomplishment so many of us need; Mr. Breitbart does this sort of thing quite as a matter of routine.

Next you get to see a picture of Keith's Theater in which Mr. Breitbart performed; then you get to see Mr. Breitbart and his muscles from the waist up, including also a most aggressive pompadour.

Then comes the text matter with such headings as "Muscle Rules the World," which tells you that exercise and muscle building make success. By this time, evidently fearing that he may be thought a braggart, Mr. Breitbart, coyly makes this little disclaimer:

> I do not wish to be thought egotistical or go about shouting and blowing my own horn. I leave such self praise to others and I hold myself far above such cheap and unbecoming practices. I determined in this book to let others tell you all about myself.

Then follows page after page of clippings about Mr. Breitbart and photographs of Mr. Breitbart when Mr. Breitbart was on the vaudeville stage. There is Brietbart breaking a heavy iron chain with bare hands—with a closeup of the chain—Breitbart bending and coiling a one-half inch thick iron bar around his arms with bare hands, Breitbart biting through a heavy iron chain which six husky men were unable to break apart; Breitbart resting on a bed of nails supporting a bridge with a man and an ox weighing over a ton.

And so on and on and on interminably: Breitbart after Breitbart—and muscle after muscle, until at last one comes to the pages of testimonials and the photographs of the pupils, and the final plea to "Fill out and mail the enrolment blank at once."

Earl Liederman's 16½-inch arm

We were convinced that Chas. Atlas was the world's most famous man, but here is Mr. Breitbart's claim.

> Muscle by muscle, inch by inch, Breitbart easily outstrips every claimant to Strength and physical development—surely he is the Superman of the Ages.

Nevertheless, Charles MacMahon of Philadelphia, about whom we shall speak later, outstrips Breitbart—he doesn't even wear a breech clout.

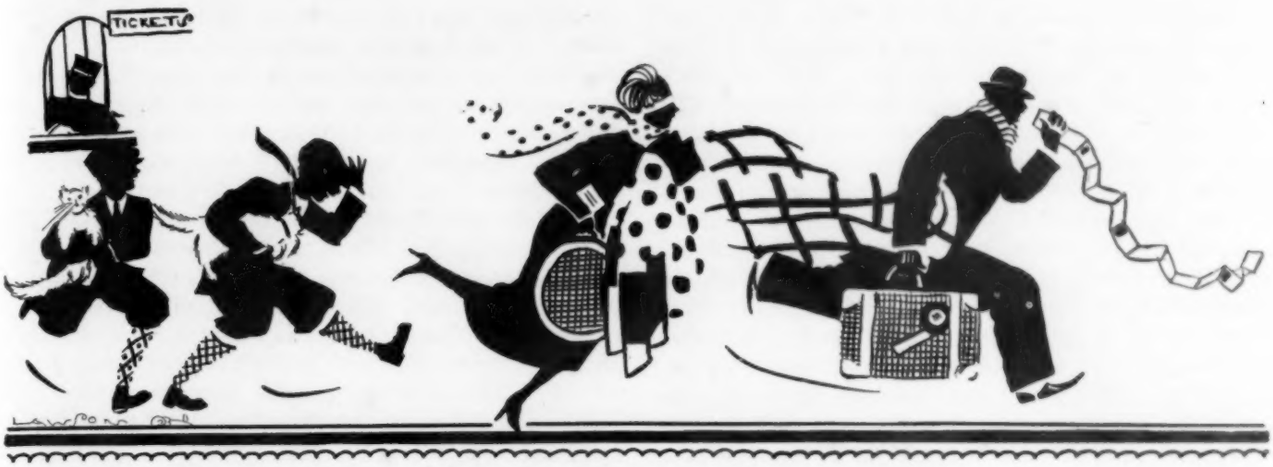
Mr. Breitbart's free "muscle meter" is a piece of red paper that you paste around your biceps muscle. Then you bend your arm and if your muscle is as big as Mr. Breitbart's you can break the paper. We refer here not to the strength of the muscle but to its volume. Mr. Breitbart isn't stingy. He gives you a paper tape measure in addition to the "muscle meter," and he gives you a money-order blank all filled out ready to send him $25 cash or $26 on time. Mr. Breitbart also has a confidential information blank in which he inquires if you are subject to colds, asks about your appetite and if your temperament is nervous and emotional, or quiet and steady. Naturally Mr. Breitbart has to know these things to plan your course.

Introducing Earl Liederman

Mr. Earl Liederman offers you ten more years of life. "I don't claim to cure disease," he says. "I am not a medical doctor but I'll put you in such condition that the doctor will starve to death waiting for you to take sick."

Earl Liederman fixes you up in ninety days and he requires two pages of advertisements to tell you about it—one devoted to Mr. Liederman *a la naturel* and the other to his announcement. When Mr. Liederman is through with you you are a real man, he says. He tells you about your deep, full chest, your huge, square shoulders, your massive, muscular arms, the flash to your eye and the pep to your step.

All you have to do is to send for his booklet "Muscular Development." It contains, as by this time you will have come to expect, forty-three full page photographs of himself and his pupils. There are the bare-torso photographs in every conceivable posture, and there are six bare-torso pupils. Then at last there is a letter asking $28 in cash or on time. It is the same old postal money-order blank, the same old imitation personal letter, the same old questions and the same old mention of the necessary apparatus. And, if you fail to bite, finally there come to you week by week the same old follow-up letters.



What Caused Smith's Asthma?

D. F. SMILEY

SPEAKING of hay fever and asthma, I believe most of us put in the position of the Smiths would have been just as mystified as they were. The whole story runs something like this:

Smith was a prosperous, hard working sales manager in one of our mid-western cities; a healthy, optimistic individual in love with his work, his wife, his home and his two boys. He had been doing well in business during the winter of 1920 and decided to send his family out to Estes Park, Colorado, for a real vacation during the summer, expecting to join them for the month of August.

During the early summer Mrs. Smith and the boys got comfortably settled in a little cottage in the park and wrote back glowing accounts of the friends they had made, of the good times they were having and of the two beautiful kittens that friends had given the boys. So it was with great anticipation that Mr. Smith left his office early in August to join his family for what he fully expected to be an extraordinary vacation.

It was a pleasant trip and Smith arrived at the park feeling fine. He was very much pleased to see the family looking so well and that evening, as he sat on the porch of the little cottage talking with his wife, he had visions of fishing trips, mountain climbing and a month of real relaxation.

By bedtime, however, he had developed a wheezing in his chest which he at first thought must be a cold, but by midnight the wheezing had become so pronounced that he could hardly draw a full breath. Finally, about two a. m., he got relief by driving his car along on the open road with a full breeze striking him in the face; the relief was so welcome that he decided to spend the rest of the night in the open. Morning found him crouched down in the seat of his car, cramped and cold but free of his difficulty.

To make a long story short, that is what happened night after night till Mr. Smith decided that there must be something unfavorable about the air of the park and he had best go home, see his doctor and await the return of his family at the beginning of school in September. This he did.

Imagine, therefore, the fervor with which the Smith family, boys, baggage and cats, was greeted upon its return after about three months' absence. Smith frankly stated that staying home together in the future was preferable, as far as he was concerned, to vacationing separately.

But he spoke too quickly. In the absence of his family he had not been happy but he at least had been well, and now that they had returned the old wheezing attacks began again. Was it due to some disease germs they had brought back from Colorado? He asked his doctor and was told "No"; what he needed was a three weeks' vacation. So he took it—three fine weeks of fall hunting up in Minnesota—and came back radiating health and good spirits. But, alas, by midnight of the first night home Smith was desperately breathless! What was the matter? What was he to do?

A medical friend diagnosed the case as asthmatic bronchitis and advised six weeks in Arizona to make sure that any question of tuberculosis might be laid low. But this was getting serious—time off—tuberculosis—more separation—Mrs. Smith was getting desperate!

But that Christmas when her husband arrived home from Arizona having gained twenty

pounds and looking fine she took heart and told herself their troubles were over. That evening was an eventful one; the happiest Christmas Eve ever—dinner, music, a romp with the kiddies and cats and then stocking-hanging time! But then the fun stopped. Smith could hardly breathe. The asthma had come back!

The next morning plans formulated themselves rapidly. Smith was to return immediately to Arizona and Mrs. Smith was to pack the household things and follow. A trip to the office to settle once and for all with business associates, a trip to the movers to arrange for the packing and moving and Mr. Smith was gone and Mrs. Smith was left with her troubles.

Three weeks later a very anxious but perfectly healthy husband was down at the train to meet his very much neglected family. He had bought a little house in the suburbs of a thrifty Arizona city, had reestablished connections with his old firm and was ready to start life over again in the arid atmosphere so noted for its favorable effects on lung diseases. Life again had taken on an interest which even the memory of past difficulties could not mar and the future seemed full of possibilities.

As the train pulled in and the bedraggled little wife threw herself into his arms and began to tell him of her troubles with restless boys, hungry cats and stubborn movers he smiled sympathetically and swore they would never separate again.

The moving had been very hard for his wife, leaving old friends had been hard too, selling the old home (at a thousand dollars loss, incidentally) had been harder yet and, worst of all, had been the difficulty of caring for and feeding the kittens on the long trip down. Nevertheless, the boys were determined that the cats should not be left behind and with all the troubles it was rather satisfying to see the whole family complete and safely arrived.

This time it seemed as though they had found the combination for health and happiness in the new country, and there were two solid weeks of real comfort before the bugaboo returned. But return it did, though more gradually than before and with not quite the viciousness of the former attacks. What was there to do? The attacks were becoming more like the old ones, even in Arizona! They called in the doctor and put the case before him. Things were coming to desperate straits. Wasn't there something to do? The doctor thought there was.

Three weeks before, the state medical journal had carried an article presenting the results of tests and treatment for hay fever and asthma along a line which seemed to be very promising. Fortunately a California doctor not very distant was one of those using the method. There was no question but that the new scheme was worth a trial.

The next step was therefore taken, an appointment made, and Mr. Smith found himself in the white tiled office of the specialist answering all the weird questions imaginable while the doctor made small painless scratches on his forearm and covered them with drops of muddy solutions which he took from an endless series of small vials.

Did he sleep on a feather bed? Did his mattress have horsehair in it? Did he have trouble in riding behind a horse? Were there any cats around? The questions seemed as endless as the row of vials, but finally the test was completed and the diagnosis made.

One out of all the scratches looked different —red, swollen like a hive. What was the solution on that one scratch? The specialist traced down the list of vials, comparing numbers, and pulled out number five. It was marked "cat hair."

Could that be it? Was it simply the presence of those sleek, hair-shedding cats that had made life with his family impossible all these months? The specialist thought it was.

And so it proved. The boys were in tears, but the cats had to go, the house had to be very carefully cleaned from cellar to garret and all stray cats had to be kept at a distance. With those things done the cure was complete! Telegram followed telegram back to the home town. The old job was still open and Smith was welcome to it. The old friends were waiting expectantly and a new house was preferable to the old one anyway, provided the new one had never been inhabited by cats.

So, after eleven months of trouble and upheaval, the Smith family returned with rejoicing, chastened in spirit and pocketbook, but duly thankful for the advance of science and for the absence of those two innocent but trouble-brewing kittens.

Do Your Ears Hear?

HAROLD HAYS

THE prevalence of deafness in the United States is appalling. Fred De Land, one time editor of the *Volta Review,* a journal founded by Dr. Alexander Graham Bell to spread the gospel of speech reading to the deaf, wants to form a society for the conservation of hearing and thinks that it is a patriotic duty for everybody to belong to it.

Warren Pond, president of the New York League for the Hard of Hearing, has stated that he believes there are over 5,000,000 deaf people in this country who are socially and economically incapacitated because of this physical handicap.

These figures may be a little high or a little low; nevertheless, deafness is a handicap that must be reckoned with seriously for it causes more unhappiness than almost any other physical defect. The sad part of it is that 90 per cent. of all hearing troubles could be corrected if they were treated at the proper time.

If you yourself are not deaf, if no one of your intimate friends is deaf, if none of your children is hard of hearing, you will not be much interested in the subject. But if you have been placed in intimate contact with the deaf, especially if you have to strain your own ears to be sure that you don't mistake what is said to you, you will want to know why your ears do not hear and what can and cannot be done to improve the condition.

Would you believe that one out of every ten persons has some hearing defect in one or both ears? One ear hearing is like one eye seeing; there is no way of accommodating yourself to the sounds around you. If the sight of one eye is gone, there is very little reason why the sight in the other eye should go; but very often when you have lost the hearing in one ear, there is impairment in hearing in the other ear as well, a condition which will not be apparent until nine-tenths of the hearing is lost.

Deaf Persons Are Introspective

Would you believe that deaf persons are the most introspective people in the world and that psychologically they are turned upside down? Almost all of them have a mental twist so that they feel that they ought to be ashamed of their infirmity. The result is that they won't help themselves, either by learning lip-reading or by wearing a hearing device.

You know how hard it is to talk to a deaf person. Do you wonder then that he can't hold his job and that it is very difficult to get a new job for him? The average successful employer is looking for efficiency and he can't imagine the deaf person to be efficient. Moreover, it is annoying to have to shout at the employee and to be misunderstood half the time.

No matter whether there are 5,000,000 or less than 1,000,000 deaf persons in the United States, there are 80 per cent. more deaf people than there should be. The reason for this is that deafness, at least four fifths of it, can be prevented if proper treatment is instituted at the onset of the trouble. This means that the majority of persons become deaf in childhood and that nothing is done to alleviate the trouble until they begin to complain later in life; then it is often too late to do more than arrest the condition.

There are a thousand and one causes for deafness most of which resolve themselves into a change that takes place in the middle ear. Here lie the small bones that transmit the sound waves to the central nervous system, where they can be properly interpreted. The transmission of sound is a mechanical process. Sound reaches the ear in waves that strike the drum and set it into vibration. This vibration goes through the little bones of the middle ear (hammer, anvil and stirrup) until a small ligament which surrounds the foot-plate of the stapes (stirrup) is set in motion. Such motion irritates the fluid of the cochlea (spiral) of the internal ear, the finer parts of which are arranged like the keys on the piano. From there the irritation is transmitted through the auditory nerve to the brain and an interpretation made which differentiates noise from sound. In the majority of cases of deafness, there is some defect in the transmitting apparatus. It is just like a telephone with a loose wire or a defective receiver. The sound should come through it properly but it doesn't.

Most Deafness Starts in Childhood

The majority of cases of deafness start in childhood and the majority can be arrested at that time. This means that there are some cases that cannot be improved or cured. No one can do anything for a deaf-mute. Seldom can anything be done for the child who becomes deaf as the result of syphilis or meningitis. Often very little can be done for the ears of the child who has had a severe mastoid operation. But a great deal can be done for the child who has become deaf as the result of one of the contagious diseases, from repeated colds in the head, from repeated ear aches or from blowing his nose improperly.

The greatest salvation of the deaf is in joining one of the various leagues for the hard of hearing, for there they come in contact with happy, deafened persons. There is no atmosphere of gloom at the New York League for the Hard of Hearing, whose clubrooms are pictured above. To the left, several deaf women may be seen making some extra dollars at sewing; to the right is the restful parlor of the League.

Two examples will suffice to demonstrate. In an investigation in Chicago a few years ago, it was found that in one of the public schools there were about ninety deaf children out of a total of 1,200. Over 80 per cent. of the children who were placed under treatment were improved or cured of their hearing defects within a short time. This may seem a small number of children but when one multiplies it by the number of children in the public schools of Chicago, it is appalling to think that there may be well over 25,000 children in this one city who are suffering from noticeable trouble with their ears.

In New York City, within the past year, an examination was made of the children in one school. About 100 children were sifted out, and of these, seventy were examined by the writer and his associates. It was found that over half of these children were suffering from what might be termed "potential deafness"—that is, they were not deaf at the time of examination but suffered from deafness whenever they blew their noses too forcibly or whenever they had a bad cold in the head. It is quite possible that there are over 50,000 children in New York City who need attention paid to their ears, children who will surely suffer from a hearing defect when they reach adult life.

By far the largest proportion of deaf persons will state that their deafness began after their recovery from a contagious or infectious disease. If this be so, is it not about time that a definite rule were established by the wise physician and the wise parent to examine the hearing of every child at periodic intervals, if he has had any trouble with his ears during the process of an infectious disease?

Try These Tests on Your Child

Examination of the child is not difficult even if the test be inaccurate. The chief tests to be used are the natural voice, the whisper test and the watch test.

1. *The Voice Test.*—The ear not to be examined is closed off with the finger. The examiner stands at least twenty feet away in a quiet room. In a natural voice, he states numbers which he asks the child to repeat. The normal ear should hear the voice at twenty feet. The other ear is then tested in the same way.

2. *The Whisper Test.*—The examiner should stand at least ten feet away. He then whispers numbers or words, gradually approaching the child. The whispered voice should be heard six feet away without any difficulty.

3. *The Watch Test.*—Any loud ticking watch will do for the test. One should start at least ten feet from the child and gradually approach. The watch should be heard distinctly at six feet.

Of course it is almost impossible to make these tests accurately in very young children and sometimes in older ones. But a great deal can be gained from ordinary conversation. If one once obtains the confidence of the child, it is seldom that he cannot ascertain whether there is any appreciable degree of deafness.

If one finds that a child is deaf, what can be done to improve the hearing defect? This will depend on the degree of deafness and the pathological condition which is present in the ear. Moreover, it will depend on the factors which may, sometimes even remotely, cause the trouble.

The child may be deaf from a stoppage of the tube going into the ear from the throat (the eustachian tube) because of the presence of diseased tonsils and adenoids. To improve the ear condition, the tonsils and adenoids must be removed. Otologists feel that there will be far less deafness in the future because tonsils and adenoids are being so well removed nowadays.

The child may have a running ear. This discharge from the ear must be arrested in some

way. The treatment will vary considerably according to the individual case.

Or the child may be blowing his nose like a trumpet and forcing too much air into the ears with the result that the drums are blown out of position. In blowing the nose, the handkerchief should be held loosely below it or one nostril should be held at a time.

Aside from these forms of treatment, the ear specialist will be able to employ certain forms of treatment adapted to the individual case. In any event, one must consider that no treatment is disastrous, that inefficient treatment is useless, and that worth while results can be obtained in many cases provided there is the proper cooperation between the patient and the specialist.

Do your ears hear? Not only should every one ask himself that question but he should test his ears to find out. Procrastination is criminal. One year of inattention may mean dozens of years of suffering and, when that time comes, the time when little can be done, you will go to the conscientious ear specialist, who will tell you how hopeless the condition is. Then you may spend thousands of dollars visiting the endless number of quacks, who will promise you everything and do nothing. If all the money that was spent on quacks were devoted to the study of the problem of deafness, it might be possible to do something worth while in the years to come.

Three Suggestions for the Deaf

No doubt many of the persons who read this article are already deaf and are wondering whether the writer can suggest anything to relieve their suffering. Their hope does not lie in medical aid, although the periodic advice of an honest physician may be necessary, but they can help themselves to a great extent by following these three suggestions:

1. Learn lip-reading.
2. Wear a hearing device.
3. Join one of the leagues for the hard of hearing.

1. Lip-reading is the salvation of the deaf. In the first place it stimulates the individual to a greater effort to understand and therefore stimulates the ear mechanism. But one must remember that lip-reading is a new language and that it may take years to master it. But it also takes a long time to master the German and the French languages.

Once the art of lip-reading is cultivated, a patient's whole life is changed. He understands! The author knows of deafened soldiers who have mastered the art of lip-reading in three months of intensive study and he knows of one case in which the family did not learn for months that the soldier was deaf.

2. The wearing of a hearing device goes against the grain of the majority of deaf people. They are so afraid they will be found out—that they will look conspicuous. But the only people they fool is themselves and today the wearing of hearing devices is so common that no one ever notices the person who wears one.

3. But the greatest salvation of the deaf is in joining one of the various leagues for the hard of hearing. The national organization, the Federation, is composed of leagues situated in various cities throughout the country. In these leagues one will find happy, deafened people who have become mentally rehabilitated. There is an atmosphere of cheer instead of gloom.

Here one is taken into the inner sanctum and made to understand that the deaf person is his own worst enemy and that he has the same rights and privileges as hearing people if he will only get the kink out of his brain and act like a hearing person. The leagues have social service agencies, they have employment bureaus, they have classes in lip-reading, they indulge in suitable social activities, but better than all this is the propaganda they are spreading that deafness must be prevented and that every teacher, every parent, every physician must be made aware of this fact.

We are saving the child's eyes! We are saving the child's teeth! Is it not worth while to save the child's ears?

THE WORST HEALTH FAD OR FRAUD I EVER FELL FOR

FOR the best letters on the above subject HYGEIA will pay cash prizes of $25, $10 and $5, the letters not to exceed 500 words. Letters should be written legibly on one side of the paper only and should reach the following address on or before April 20, 1925:

Hygeia Contest Editor, American Medical Association,
535 North Dearborn St., Chicago.

The ROAD to NOME

BALTO

ALICE ROGERS HAGER

Men and dogs on the Arctic trail,
Fighting the blizzard home,
Blind and dumb in the roaring ice,
Breaking the road to Nome:

For sick lips cried that they be spared,
And white men dared to go,
Out through the din and the thundering night,
Out through the wind-whipped snow.

Kasson, Sappalla, the names are limned
In the light of the Northern Fire,
But with them a wolfish spirit runs—
Balto, son of his sire!

When the wolf-pack howls at the blizzard's toll
And the eyes of men are dim,
Still shall the mushing drivers tell
Of the great, mad strength of him.

Balto who sped on an unseen track,
With death at his panting side,
Fearless and sure in the blistering dark,
And love in his shaggy hide.

And then when the hard-fought miles were done,
Comfort and warmth and praise—
But the warrior's soul went out again
To the den where the North Wind plays.

Brother of flickering Light and Sun,
Lent for a while to Man,
Paying the stakes at the end of the game
To further the Wolf-God's plan.

Wild and free on the unseen trail,
Brother of mist and snow—
Hark to the voice of him out of the dark,
There with the pack below!

Men have circled the circling earth,
Laughing at air and foam—
But tell of a greater tale than this:
Balto, who went to Nome!

—*Atlanta Journal.*

THE carrying of antitoxin to Nome, faced by an epidemic of diphtheria, was a race between life and death. Writers have told again and again how medical science has depended on animal experimentation for the development of diphtheria antitoxin; how the guinea-pig, the rabbit, the monkey, the rat, and the horse have been used in studies of toxicity, in preparation and in standardization of the antidiphtheric serum.

Much has been written of the heroism of the men who carried the antitoxin to Nome—who braved the snows and cut the usual fifteen days from Nenana to Nome to a little more than five. The poem from the Atlanta Journal renders tribute to the teams of Eskimo dogs that raced across the frozen country with the precious cargo that saved human lives.

Controlling Drug Addiction

LAWRENCE KOLB

IT IS now some thirty years since members of the medical and pharmaceutical professions sounded the alarm over the growing evil of narcotic drug addiction in the United States. At that time morphin and other preparations of opium, as well as cocain, could be bought anywhere with no more restrictions than are placed on the purchase of candy today. As an added evil, numerous patent medicines not known by the public to contain large quantities of these habit-forming drugs were sold indiscriminately to people who innocently took them until they became addicts.

Persons with imaginary or real illness bought and doctored themselves with laudanum or opium, or, without the knowledge of their physician, had his prescription for morphin refilled time and again. At some time during their course of self medication, when for some reason the usual dose would not be taken for a few days, they would feel tired and restless and these feelings were usually relieved by more of the same medicine. This would be interpreted as proof of their illness and of the special virtue of the particular preparation they had been using in relieving it.

Sooner or later they would wake up to a realization that the symptoms they had been treating were due to the drugs themselves and that they had contracted a habit difficult to cure.

In addition to this innocent means of becoming addicted, boys who were not properly controlled by their parents would, with other members of their gang, buy cocain or heroin and sniff it in order to prove that they were as smart as their companions. A large proportion of the older addicts now met with became addicted by these means before the passage of restrictive narcotic laws.

Narcotic Laws Were Opposed

Suggestions made by physicians for restrictive legislation to remedy this evil were at first met with the usual opposition offered by those who are against any limitation on individual freedom of action. In some instances, it was charged that physicians, in their insistence on such legislation, were actuated by the ulterior motive of depriving suffering people of the privilege of obtaining medicine in order to force them to pay physicians for prescribing it.

But reason finally prevailed and, since 1897, the different states and the federal government have enacted numerous narcotic laws, so that at the present time the handling of these drugs is controlled from the time a permit is issued for their importation until they reach the ultimate consumer. A vindication of the attitude of physicians and of the laws they urged is furnished by a recent report of the U. S. Public Health Service, which shows that the ratio of drug addition has decreased from approximately one addict in every 315 of the population in 1900 to about one in every 900 at the present time.

New cases of drug addiction are now confined almost exclusively to nervously abnormal persons who buy smuggled narcotics from pedlers, and to other persons to whom it has been necessary to give morphin to relieve prolonged physical pain or distress of one kind or another.

In order to eliminate the illicit use of narcotics, the United States is now negotiating with other countries in an effort to bring about some arrangement whereby the production and sale of these drugs will be so limited that none will be available for smuggling. If this end is successfully accomplished the last remaining vestige of unnecessary drug addiction will disappear.

Unfortunately, there are many obstacles to the restrictive program yet to be overcome, and it may take years to surmount them. The growth of opium in China has increased and the central government, though doubtless sincere in its efforts to limit production, is too weak to do so. The Chinese raise much more opium than the rest of the world combined, and though they consume practically all of their own crop as well as much that is raised elsewhere, it is quite possible that if other nations limit their crops, the production in China will increase so as more than to cover the home demand, leaving an excess to be smuggled elsewhere. Nothing would be gained by such a procedure.

Our Drugs Come from Turkey and Persia

Morphin and heroin, the preparations of opium used almost exclusively by addicts in the United States, are derived from a high grade product raised in Turkey and Persia. These drugs are not manufactured from Chinese or Indian opium, and if a small amount of opium from China or India ever reaches the United States it is in the form of smoking opium that is used by Chinese living here.

Inhabitants of countries producing the opium and cocain used by addicts living in the United States and Europe are not easily persuaded that they should limit their means of making

a livelihood in order to protect dissipated peoples of other countries.

As a means of surmounting this difficulty suggestions have been made for the substitution of other crops for opium, but a change in the habits and mode of gaining a livelihood of thousands of people is not easily brought about, even where it is possible to do so at all, without seriously embarrassing the economic condition of those most concerned.

An international agreement to limit the manufacture of morphin and heroin to actual medicinal requirements has also been proposed. An agreement of this sort if it were possible of strict enforcement would go a long way toward solving our narcotic problem, but none of the proposed methods seems likely to be adopted and enforced in its entirety in the near future. In the meantime it will be necessary to use all available facilities to their utmost capacity in order to bring about a still further reduction in the number of addicts.

A medical profession alive to the dangers of narcotics has, by the cooperation of pharmacists and law enforcement officers, brought about a condition whereby persons with normal personalities are seldom made addicts unnecessarily. Also, the rigid enforcement of laws has impelled many of the abnormal addicts to seek cure, but there is much yet to be done. National and state governments, as well as the physicians and druggists, are doing what is possible to prevent drug addiction.

Any additional protection must come through individual prophylaxis and more careful attention to the principles of mental hygiene. A further great reduction in the number of addicts is not to be expected by these measures because mental hygiene ought not to be enforced by law. Not many people have a clear understanding of its limitations. Specific cases may however be avoided by correct training in childhood of the type of individuals who later on become drug addicts.

Abnormal Children Most Apt to Take Drugs

At least 95 per cent. of unnecessary addiction occurs in persons who deliberately seek it. According to my studies, the average age at which these dissipated cases begin to take narcotics is 22 years, but it is found that as children, a large proportion of them were habitually truant from school, or because of delinquent practices had trouble with the police and were usually allowed to grow up with little control by their parents.

Such persons have not only their inborn abnormal impulses to contend with but they are more easily influenced than average individuals, and in an evil environment the weakest and therefore the more susceptible among them think they must follow the example of others. They are especially likely to indulge in forbidden practices which, like the taking of narcotics, have an added charm because of their secrecy.

These children as well as their more normal companions start off with a framework of intellect, impulses, tendencies and temperaments that are built upon for good or evil, depending on the direction given their various abilities and tendencies by environmental factors. The factors of environment operate throughout life, but with greater molding force during the early formative periods. The average normal child may emerge unharmed from a childhood of neglect and indifference, or of vicious training on the part of parents, but no such result is to be expected of a child with abnormal tendencies.

A most important consideration, then, in the prevention of specific cases of addiction as well as of other forms of delinquency is to train the handicapped child so that he may be freed from his antisocial tendencies or taught to curb them. This is more easily stated than done and it is difficult at times to decide what form of training or treatment to give him.

Parents Should Keep Tab on Children

Parents should early consult psychiatrists about such children or get advice from mental hygiene clinics. Above all, they should know what their children are doing, censor the company they keep and direct their activities along healthy lines until their characters are formed, so that they may at least acquire a background of morality based on correct habits, and a sense of social responsibility and respect for law.

If this is done, the very susceptible persons who so often become addicts later in life will be less likely to experiment with new sensations or indulge in such forbidden practices as the taking of opium and cocain for fun.

Persons have taken one or another preparation of opium and become addicted before they knew the drug was habit-forming. There is not much danger of this now because only very dilute preparations can be bought without a physician's prescription, and prescriptions cannot be refilled, but among the 5 per cent. of cases of unnecessary addiction there are a few who contracted the habit this way.

Every one should, therefore, be told about the danger of narcotics, but the subject should not be stressed so as to excite the curiosity of unusual personalities. Such a procedure might cause what it is intended to prevent.

How I Choose My Vacation

PRIZE LETTER CONTEST

First Prize Letter—$25

IT IS hard for me to choose a vacation, for my husband is an invalid, who hasn't walked a step alone for nearly five years. I am his nurse and my own maid. We do light housekeeping in two rooms. Our son and his family occupy the rest of the house.

As I can't get away from home easily, I choose a garden for one slice of my vacation. Giving my husband my old school bell, I don some clothes that will wash and work in my garden an hour or more each day. Thus I obtain fresh air and fresh vegetables. I hire the garden plowed, and I do the rest—planting the seed in the spring sunshine, watching the plants grow and mature as I hoe and pull weeds, and gathering the finished product under autumnal skies. This is a real vacation for me from the nursing and housework.

Another vacation I choose is a picnic supper in our back yard, with our three grandchildren, two boys and a girl. I pack the lunch as though we were going to motor to some park miles away. The children bring a chair for me and arrange the lunch on a table under a huge tree. We eat, laugh and talk, after which I dream and rest and speculate on the future of the children, as I listen to the bird songs and watch the nodding flowers. The coolness and quiet peace of it all rests and recreates me more than a hot trip to some far distant park. If I hear my husband's bell, I can skip in and attend to his wants, and am soon back again to my great, big out-of-doors restfulness.

When my nerves are taut and tense, I choose a slice of vacation of some kind. Perhaps it is only a call on some neighbor, or a walk of a few blocks to look at a gorgeous sunset; perhaps it is an automobile ride that is offered me, while some kind friend sits with my husband. If nothing better offers, I choose a quiet hour of reading, sitting by the east window of my library-kitchenette or, if in summertime, on my screened porch. I let my mind follow the writer to other lands and other scenes, and so I have new thoughts to carry back to my work.

Whatever it is, I choose each day something outside of my regular work that will recreate my taut nerves and rest me—body, mind, and spirit—and this to me is a vacation.

My greatest vacation, however, came last fall, when I was drawn on the jury. Instead of asking to be excused, I chose to serve. I hired a woman to care for my husband during the day.

Mrs. Ivan De Armand

I came home nights, all but one night which I spent in the jury room. That vacation counted.

P. A. H.,
Fort Dodge, Iowa.

Second Prize Letter—$10

I HAVE two vacations, the real one and an imaginary one. Since the first requisite of a perfect vacation is change of occupation, I take a trip to Bermuda. This is the imaginary vacation, of course. Being a school teacher, I know that the trip is impossible. Nevertheless, I do take the trip, and there in old St. Georges, I play golf, swim, loll away the late afternoon on the beach of the Fairyland section, or climb to the top of Gibbs' Hill Lighthouse where I enjoy the finest view in Bermuda. My friends envy me when I come back in September with firm muscles, elastic step, and a coat of tan.

In reality, I read about Bermuda in the *Mentor*, and learn from HYGEIA that I need exercise; consequently I go out to seek all of the outdoor sport that I can find in my home town.

Long hikes and swimming with the young people are what I find. No, I cannot get away from the boys and girls in the summer. But they are different creatures outside of the schoolroom.

To make my change of occupation still more complete, I go into my mother's garden. Yet in spite of myself, I am still the pedagogue. I teach the beans to climb, the lettuce to curl, the corn to ear, and the potato bugs to eat arsenate of lead. In other words, I train the garden in the way it should grow. How I sleep at night! How I enjoy eating the vegetables I coaxed to grow!

There are the flowers too. The hollyhocks grow above my head while I grow rested in mind. Gladioli provide such a riot of color that I am certain of being in Bermuda. I spend my vacation right at home with the same people, the same streets, and the same river—the same and yet not the same. Fresh air, exercise and friends make my vacation profitable. Still, something else contributes to my ideal vacation —fancy, romance, imagination, call it what you will—I choose to have it as a part of my vacation along with the other requisites of good health.

D. G.,
Princeton, Wis.

Third Prize Letter—$5

PLANNING a vacation requires thought and imagination. Four cardinal principles guide me in my choice.

1. *The vacation must be a complete change from my regular occupation.* For me, a city-dweller, engaged for the most part in caring for a home, to move to a summer cottage devoid of modern conveniences would be almost as inadequate as for a dressmaker to spend her vacation sewing for her family, or a carpenter to spend his building himself a garage.

2. *The vacation must be largely recreation and play.* The routine and monotony of a summer resort do not suffice. A chair on the board walk at four every afternoon smacks of the regularity of my baby's feeding schedule.

3. *The vacation must be an event that I shall anticipate keenly and reflect upon pleasantly.* In interest and satisfaction it must transcend my daily and weekly recreation; it must be an oasis in my yearly life.

4. *The vacation shall demand that I keep fit in order to undertake it.* I do not wish to take a vacation as a therapeutic measure, as one would enter a sanitarium to recover from the exhaustion of eleven months. It is impossible to concentrate enough hygiene, rest, change and activity into a few weeks to counteract a year's accumulated deficiency. Only by keeping reasonably fit for eleven months may one reap the full glories of the twelfth.

Guided by these four points my husband and I have turned largely from the conventional motor trip with its lack of big muscle activity, the beach with its monotony of summer hotel, and the camping trip with its too frequent menus of fried foods—though all of these have their advantages—to the charms of a vacation not so popular but of vastly more benefit to us —the walking trip.

We pack the barest necessities in two small "Musette" bags, secure them over our shoulders and shod for the trail set out for some new and romantic region. We are good for a distance of eighteen to twenty-five miles a day and like to reach an inn by nightfall—though we have stayed at farm houses and cattle ranches. We always choose new territory and never come out of a region by the way we enter. Sometimes we ride hundreds of miles to reach the place where we wish to walk. But when once on the way we do not accept rides; we are not cross-country hikers looking for a lift to the next town.

In such manner we have walked through the Adirondack Mountains, through Glacier National Park and through the picturesque mountain country of Utah and Idaho.

The physical exhilaration, the calmness of soul and the rich memories we gain from such an outing seem wholly to satisfy our need for a vacation.

LUCILE ROGERS MARSHALL,
Salt Lake City, Utah.

Honorable Mention

BEING an indoor worker in the city throughout the year, I long for a holiday in the sunshine, the green fields and the green woods, and all of the great out of doors.

Each year, as I look forward to my vacation, it is always a picture of just such things. I long for freedom—freedom in every sense that can be imagined. I do not want to hear factory whistles and school bells, or to see time clocks, offices, desks and men waiting for instructions. I want to drift—to be free to do or go just when or where my fancy desires at that moment. Getting fussy? No, just enjoying a vacation. My time is my own right now. It won't last long, but it shall be real while it does last. There shall be nothing that must be done "just so" or "right now."

My vacation this next summer must bring to me four things: the great out of doors, both day and night; things different and pleasant for the mind; proper comforts for the body; proper exercise and foods.

I intend to forget the worry of work and business. My wife and daughter will accompany me, and they will do the same. We will live today wherever we are today. We will forget yesterday, and think of tomorrow only when tomorrow comes. We know now just how much cash we can afford to spend, and just how long we can stay. We have our tent, beds, cooking outfit and trunks and they all fit the car, and also fit the family.

We are going to spend this vacation in our own home state—Wisconsin. We shall drive to the northern part of the state, where grow the pines and spruce, and where there are many lakes and rivers.

What place are we headed for? No one place in particular! We will know it when we get there; we can tell it when we see it, and there we'll pitch our tent and stay—perhaps a day, perhaps a week.

There, perhaps the fish will bite. A trout, a perch, or bass, fresh from the lake, is always a

treat. Seldom, if ever, can we buy them fresh in the city, and besides our own catch tastes better.

Vegetables, fruit, berries, eggs, milk and cream can always be bought from local stores or from farmers. We shall forget, for this vacation, the pastries and salads of city life, and enjoy living close to nature. We shall ride, walk, row, fish, hunt, sleep and eat, and we shall enjoy the beauties and wonders as nature has placed them there before us.

We shall travel on to other places in this same manner, and when the end of our vacation time is near, we shall circle toward our own home carrying back pleasant memories as well as brighter minds and better bodies.

My advice is: Tour your own state—whatever state it may be—and learn its beauties, its wealth and its history. Then, perhaps another year, you can travel into a neighboring state and do the same.

EARL W. THRALL,
Beloit, Wis.

Ewing Galloway

Honorable Mention

I DON'T choose my vacation—it is chosen for me. This year, last year, and the year before, moreover next year and the year after, it will be the same.

The wife hasn't a thing to offer—the inevitable must happen. If she calls me a "poor fish" and disagrees with me, she only strengthens my determination to repeat the process year after year. The very epithet that she applies so scathingly sets my brain awhirl with the exuberance of it, the "next-to-natureness" it possesses and revives the boy in man. It's *fishing.*

Here is a sport of kings that the rich and poor enjoy. I take mine in the heart of the Rockies; the place in which the fish are biting determines the spot and season of the year. Whether you set your line for a wily trout, a wall-eyed pike, a channel cat, or a silver bass, it makes no difference—the results are the same. You have picked the best vacation the world affords and the charge is what you make it.

Pull away from the hectic city, the stifling office, the pulsing marts of trade and cast your lot for a week, two weeks, a month, with things as they are. You yourself can be yourself, contemplate yourself without the "fixin's." The poetry of nature is the elixir of life that will permeate the soul. Avaunt all mental strain, then how about physical fitness?

The dose regulated by common sense is available in gallons or teaspoons. If properly taken, your appetite and disposition share the benefits fifty-fifty. When the sun is up you sally forth, your reel and rod aglitter in the mounting rays. Your first battle is with entanglements or bushy embankments. You dive, you twist and turn to make your goal, which is the bed of the stream beyond, sparkling in the sunlight; then you realize that you are taking morning exercise.

Up to your knees in the cool waters, the soles of your waders glued to a slippery rock, you drink deeply of the clear, pure air and glut your eyes on the beauties about you, preparatory to making your first cast against the rippling riffle.

It is glorious, even the contemplation of it. It seems like every speckled beauty is waiting for the drop of your tiny fly, but alas the beginner is sadly disappointed. Nature is most natural, and so is fishing. The best anglers are guided by nature in the selection of their lures and the flit of that lure as it strikes the water. Book knowledge is useless; experience here is the only teacher.

Be prepared in the way of attire for every kind of weather. A few creature comforts are necessary, even if no one knows you have them.

Sound sleep, a good appetite, peace of mind, invigorating exercise and a ruddy complexion are plentiful in this good old land of ours, because we will always have fishing.

J. J. CUNNINGHAM,
Sterling, Colo.

Guarding the Health of the Navy and Marine Corps

WILLIAM MURRAY KERR

NEARLY 116,000 young men from all parts of our country are serving in the Navy and Marine Corps. Behold the young man at the recruiting office, about to receive a thorough physical examination. A careful study is made of his mind also, because limited mental capacity, mental defects or instability will prevent him from adjusting himself to naval life. Of the thousands of applicants for enlistment each year about 40 per cent. are found not physically qualified for enlistment.

Recruit Sent to Training Station

The young man successfully passes the examination at the recruiting station and is sent to one of the large naval or marine corps training stations to receive instruction preliminary to going to sea. There are four of these stations, one at Norfolk, Va., one at Great Lakes, Ill. (near Chicago), one at San Francisco, Calif., and one at Parris Island, S. C. (for marines). Here he is placed immediately in the receiving building, where he is subjected to another physical examination. Abnormalities which might have been overlooked in a busy recruiting office will probably be detected in this second investigation. The recruit who passes successfully is then sent to the detention barracks where he remains three weeks.

This period of detention is necessary in order that any infectious disease, such as measles, mumps, scarlet fever or diphtheria, which the recruit may have brought to the station, may be detected early and prevented from spreading among the men undergoing training.

Here also the recruit is vaccinated against smallpox and receives the series of inoculations that protect him from typhoid fever. His teeth are examined carefully by a dental officer who makes a note of all dental defects discovered in order that these may be remedied before the recruit finishes his period of training. He is given special instruction concerning the temptations which are encountered by all young men who leave the sheltering influence of home and venture out into the world; he is shown how these temptations may be resisted and their evil effects avoided. The doctors instruct him regarding personal hygiene and the general care of his body.

The recruit now receives instruction in the technical branches peculiar to the naval service and takes part in the various drills necessary to develop him into an able seaman or a trustworthy marine. His work day is a full one, yet he has ample leisure. For his spare hours the Navy Department supplies a well-stocked library in charge of competent librarians and equipped with writing tables, writing material and comfortable reading chairs. Athletic sports such as swimming, baseball, football, basketball, and boxing are encouraged as they are conducive to health and contentment.

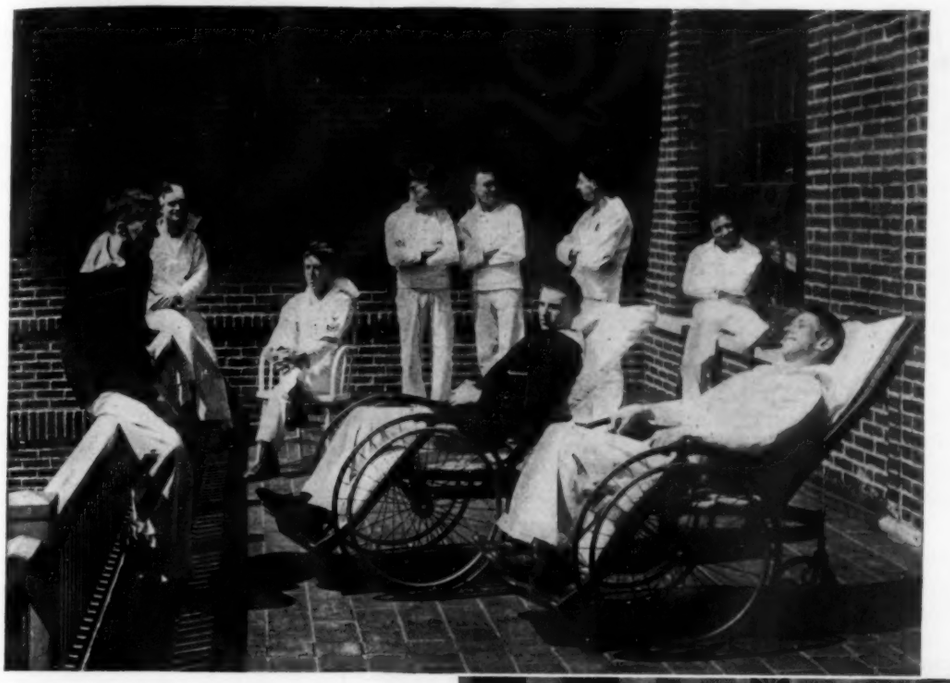
Each training station possesses a large auditorium where religious services are held on Sunday or holy days, and where moving pictures are shown several times a week. At these times the band is present and the men are taught to sing in chorus.

Watched Closely for Contagious Disease

Should communicable disease be prevalent in the civilian communities in the neighborhood of the training station, as often happens during the winter months, the recruit is examined often twice daily to discover any infectious disease in its incipiency. When any such is found, prompt measures for its eradication are instituted.

The dental defects of every recruit are corrected so that each man leaves the training station with a sound set of teeth. It is easy for the

The first duty of these gobs is to get well. They are convalescing from sickness at the U. S. Naval Hospital, Newport, R. I. In the hospital recreation room, checker champion meets checker champion.



Uncle Sam takes good care of his sick boys. He has equipped sixteen modern hospitals at principal seaports, where his sailors get the best scientific care and treatment. These boys have not forgotten that sunshine is a great healer.

Not a real casualty, this one at the right, but just first aid drill at the navy's hospital corps training school at San Francisco. There are 4,000 men in the navy hospital corps; they assist the medical officers in care of the sick and in health promotion.

There is little time for homesickness and self-pity in this surgical ward of a naval hospital. Every gob has a diversion that will keep his mind and fingers occupied.

dental officer on board ship or at a marine post to keep a man's teeth in perfect condition after this initial service and the importance of sending a recruit to sea as dentally sound as possible is so clearly recognized that the bureau of medicine and surgery of the Navy Department endeavors to maintain at all training stations a large staff of skilled dental officers.

Should the recruit at any time become seriously ill he is sent at once to the naval hospital adjacent to the training station for treatment.

The medical department of the Navy maintains sixteen modern hospitals within the United States located at the principal seaports on the Atlantic and Pacific coasts and at Chicago. In addition to these hospitals four others, outside of the continental limits of the United States, are located at St. Thomas, Virgin Islands; Pearl Harbor, Honolulu, Hawaii; Guam in the Marianas Islands, and Canacao in the Philippines.

Hospitals of the Navy are considered by authorities on hospital structure and administration to be equal in every respect to the best hospitals found in our large cities. The medical and surgical staff of each hospital is composed of medical officers who are specialists in the various branches of medicine and surgery. These medical officers are assisted by members of the navy nurse corps and the hospital corps.

The navy nurse corps is composed of women who are graduates of training schools for nurses with high standards. They are assigned to duty at the various naval hospitals and stations and serve on the Navy's hospital ships. They not only provide skilled nursing for the critically ill sailor or marine, but are required to teach and demonstrate nursing methods to members of the hospital corps upon whom devolves the nursing care of the sick on naval vessels.

Navy nurses are attached to all naval hospitals, hospital ships and the larger naval stations.

4,000 Men in Hospital Corps

The hospital corps of the Navy is a special branch of the enlisted force. Over 4,000 men are members of this corps. Their duty is to assist medical officers in the care of the sick and in the execution of sanitary requirements designed to promote health or prevent disease. These men receive special training first in the hospital corps schools of which there are two, located at Norfolk, Va., and San Francisco, Calif., and later at the larger naval hospitals. They are encouraged in every way possible to become expert in some one of the many special branches of hospital corps work.

After his period of instruction at the training station, another careful physical examination is made, and the recruit is sent to sea if a sailor, or, if a marine, to some organization of the Marine Corps. Wherever he is on duty there will be members of the medical department of the Navy to guard his health. When the recruit reports on board the vessel to which he has been assigned he is again examined by the surgeon for evidence of communicable disease or other illness. He quickly becomes accustomed to ship life and, now no longer a recruit, he takes up the duties allotted to him as a member of the crew.

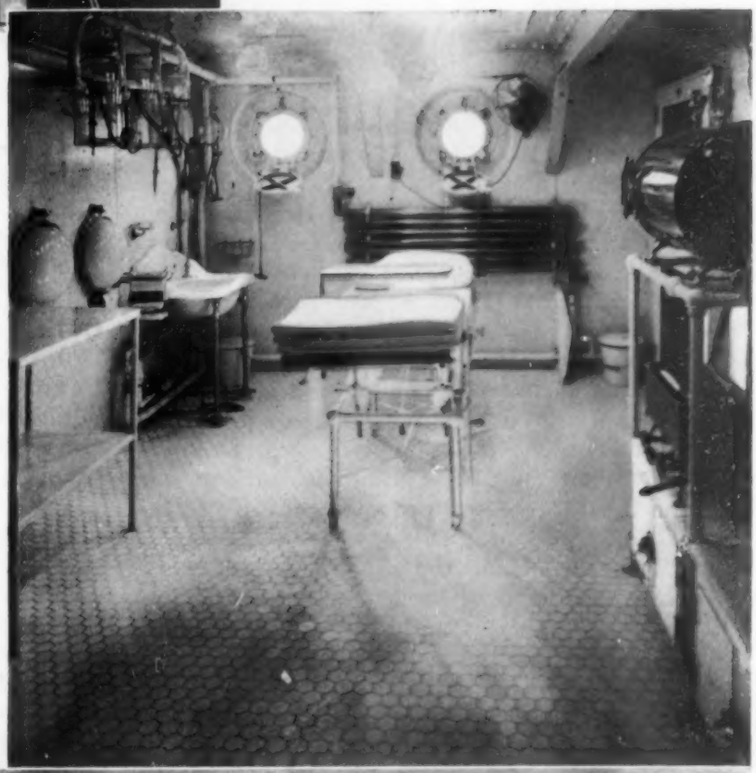
On each of our large war ships there is a spacious sick-bay or ward containing twenty to twenty-five berths, with all the conveniences for the treatment of injury or disease to be found in the wards of a hospital on shore; an isolation ward for the treatment of communicable diseases; a fully equipped operating room with operating table, sterilizing apparatus, and cabinets of surgical instruments; a dental office; a dispensary or small pharmacy, where the medical officers' prescriptions are filled, medicines compounded, and the clerical work of the medical department is performed; a dressing and examining room completely equipped for dressing surgical cases, performing minor surgical procedures, and the physical examination of men. The medical department of each ship is equipped with a small clinical laboratory with sufficient apparatus and materials to make any of the laboratory examinations required in the practice of modern scientific medicine.

Floating Hospitals Are Up to Date

Should a member of the crew be injured or become ill he is immediately admitted to the sick list and put to bed, if necessary, in the sick-bay. If his illness is severe or threatens to be of long duration he is sent to one of the naval hospitals, if his ship is in port, or to one of the hospital ships, if his vessel is operating at sea with the fleet. Hospital ships are complete floating hospitals with all the conveniences and equipment found in any modern hospital on shore. These ships carry a full staff of medical officers, most of whom are specialists in the various branches of medicine.

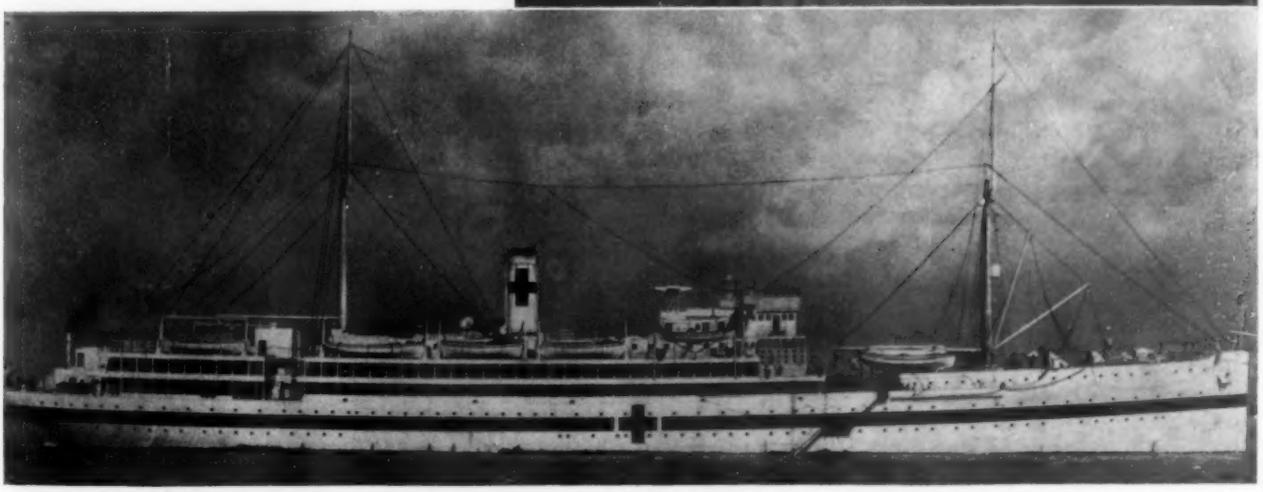
On board ship the enlisted man of the Navy is constantly under the supervision of the medical department, whose officers make frequent inspection not only of the crew but of the living, sleeping and working quarters, the ship's ventilation system, the galleys or kitchens, and the food served. The medical officers of the ship are intimately concerned in those measures that make up what is known today as preventive medicine. Their endeavors to keep the crew of the vessel well are quite as important as their treatment of the sick. They are constantly on the watch to prevent the spread of communicable diseases, to prevent accidents and to prevent men whose duties confine them more or less below decks from becoming below par physically.

Does this seem to be a queer type of hospital ward? It may appear less strange when you know it is a part of a floating hospital, a ward of the U. S. S. Relief, one of the Navy's modern hospital ships.



Uncle Sam's modern battleships have operating rooms similar to this one. Each war vessel also has battle dressing stations located behind the armor. These are supplied with the necessary appliances for caring for the wounded during an engagement with the enemy.

If a gob falls sick while his vessel is operating at sea with the fleet, he is straightway sent to one of the navy's modern hospital ships. Below is the U. S. S. Relief.



As our larger war vessels are designed primarily for battle, each one is equipped with certain battle dressing stations located behind armor and supplied with the necessary appliances to care for the wounded during an engagement. During drills simulating battle conditions each member of the crew is taught those measures of first aid to the injured which experience has proved most effective.

The sailor is not always at sea. A portion of his enlistment may be spent at one of the Navy's industrial establishments on shore, such as the various trade schools, navy yards, torpedo stations, gun factory, proving grounds, submarine bases, destroyer bases, aviation fields. Here he comes in contact with a host of civilian workmen and receives the benefit of the medical department's supervision of the hygiene of these establishments.

These are not the kitchen police of the navy, but selected sailors getting practical instruction in dietetics which will be of use to them in the U. S. Navy hospital corps. These boys are in the training school at Mare Island, Calif.

Industrial hygiene, nowadays, is a subject of quite common knowledge. The need for industrial sanitation and medical service in all large plants is generally recognized. However, few realize that the medical department of the Navy was a pioneer in this special branch of medical work. Many years ago, before much thought was given to the subject in civil life, the Navy was, as a matter of course, looking after the health of its enlisted men and civilian employees. Each navy yard had its dispensary where injured workmen could receive surgical attention and from which a medical officer and attendants could be summoned promptly to the scene of an accident.

So today in all of the Navy's shore establishments no practical measure is omitted that will improve sanitation, lessen the danger of preventable disease, reduce accident hazards, improve the treatment of conditions resulting from occupational influences, or assist in teaching its personnel to take proper care of themselves.

The United States marines have been termed aptly our "soldiers of the sea." The Marine Corps traces its descent from the organization provided on November 10, 1775, by the Continental Congress of "two battalions of marines, to consist of men with a knowledge of the sea." It has always been closely affiliated with the Navy and may be considered a part of the naval service.

The Marine Corps is called upon for the performance of many and varied duties. It furnishes detachments to guard and protect navy yards, naval bases and other naval utilities at home and abroad, guards for American legations in foreign countries, landing forces to protect American lives, rights and interests; forces of occupation to restore order and to maintain peace and tranquillity in disturbed countries; detachments for service on board the vessels of the fleet; expeditionary forces for service with the fleet in war.

Much of a marine's service is spent in tropical climates, where he is exposed to a variety of tropical diseases. Often he participates in active service in the field—the part played by the U. S. Marine Corps in the late war and in San Domingo and Haiti is still fresh in the public's mind. In all these activities his health is guarded by the medical corps of the Navy.

Camp sites are carefully chosen and their sanitation is supervised. Detailed attention is paid to his personal hygiene, food, water supply, clothing and shelter. He is taught how to avoid those insects which are carriers of disease, such as flies, mosquitoes and lice. Hospitals are established with each expeditionary force to care for the sick and wounded and the hospital ships of the Navy are available for the transportation to the United States of those whose illness threatens to be of long duration.

The Navy and the Marine Corps are great training schools for the industries of our country. The majority of enlisted men are learning some trade that fits them for employment in one or another of the industries that require skilled workmen.

After one or two enlistments they make, as a rule, valuable employees. They have learned to take care of themselves; they are self-reliant, resourceful and well balanced as a result of discipline and training. They are accustomed to think for themselves and through the teachings of the medical department of the Navy they have acquired some practical knowledge of hygiene and realize the importance of sanitation, efficient medical supervision, the prevention of accidents and first aid to the injured.

The Truth about Antivisectionists

ERNEST HAROLD BAYNES

III

PROMINENT churchmen at once came to the front to support us. When the Boston Society of Natural History decided to make known its position on animal experimentation by presenting free to the public the lecture, "The Truth about Vivisection," the Rev. Alexander Mann, D.D., rector of Trinity Church, now Bishop of Pittsburgh, announced the fact to his congregation, and on the occasion of the lecture which was given on December 17, at Huntington Hall, Dr. Mann himself introduced the speaker. He also took the opportunity to announce to the audience that he himself stood "with the great physicians and surgeons of the world, all of whom believed in vivisection."

At this lecture also, the antivivisectionists were out in force and heckled the speaker from start to finish. Some of the interruptions were amusing. As I threw upon the screen a picture of a misleading pamphlet published by the New York Antivivisection Society, one lady frantically waving some other publication in her hand, shouted:

"Why don't you quote from this? Why don't you quote from this?"

I inquired what the document was.

"It gives the names of many eminent medical men who are opposed to vivisection," answered the lady.

I replied, "Will you kindly give this audience the name of one really eminent medical man who is opposed to vivisection?"

"Yes," shouted the lady hotly, "John D. Rockefeller's own physician; his own private physician." "Perhaps," I suggested, "that is why John D. Rockefeller founded the Rockefeller Institute for Medical Research."

There was much laughter, and as it subsided, a man's voice offered another candidate—"Dr. Walter R. Hadwen." I turned to him and said, "Will you please mention one thing for which Dr. Hadwen is eminent?" The audience waited tensely silent for about thirty seconds, and as there was no reply, the tension was broken by another gale of laughter. The antivivisectionists made a great deal of noise, but, as the papers stated next morning, "the majority in the audience were clearly with the lecturer."

State Women's Clubs Favor Vivisection

Before leaving Boston I delivered the same talk before the Round Table Guild, the Aesculapian Club, and the Women's City Club. There was of course no heckling at any of them.

The women of Massachusetts gave us splendid encouragement. In the Boston *Herald* of December 31 there appeared an earnest letter from Mrs. William Lowell Putnam, who made a special plea for animal experimentation on behalf of children. Mrs. Putnam's letter closed with the words: "Sanity and truth point only in one direction, and the antivivisectionists are not following that road." This letter strongly supplemented the resolutions passed by the Massachusetts State Federation of Women's Clubs only two weeks before:

> Whereas it is impossible to estimate the number of persons living today who owe their existence to the application of methods, preventive or remedial, made possible through scientific experimentation on animals:
>
> Therefore, be it resolved that the Massachusetts State Federation of Women's Clubs, assembled in Boston on December 15, 1921, in gratitude to medical science, for past discoveries, beneficial both to humanity and to animals, go on record as favoring the continuance of medical research through animal experimentation.

The work of our committee went rapidly forward under the strong guidance of its chairman, Dr. Thomas Barbour. In January our second pamphlet appeared, and thousands of copies were distributed. It contained several important articles including one which showed conclusively why dogs are necessary in the laboratory and how dangerous it would be to pass the so-called "dog exemption" bills.

This pamphlet was followed in February by a larger and still more important one, containing remarkable exposures of antivivisection dishonesty and many very significant letters. One of the latter was from the Rev. Francis H. Rowley, president of the Massachusetts Society for the Prevention of Cruelty of Animals. In it he stated that he had repeatedly visited the laboratory of the Harvard Medical School unannounced, that he had never been refused admission to any room he desired to enter, and that all the animals he had seen vivisected "were entirely under the influence of an anesthetic."

Ernest Thompson-Seton Resigns

Another important letter was one from Ernest Thompson-Seton, the famous field naturalist and animal lover, written to the Vivisection Investigation League of New York. In it he plainly told the officers and directors that he had discovered that the organization was not what he had understood it to be when he joined it. He requested that his resignation be accepted immediately. This removed from the governing board of the league the last person of any scientific standing whatever.

It must not be thought that the antivivisection leaders allowed our efforts to pass unnoticed. They held meetings, wrote us impudent letters, and attacked us in the few newspapers that would give them space. They also sent out thousands of circular letters reviling us individually or collectively.

But it was in their magazines that they had the most fun with us. I picked up one of these, and found five-sixths of it, including all the editorials, devoted to denunciations of our campaign. The editor of one of these publications informed her readers that I reminded her more and more of "a ferocious wolf in sheep's clothing." The vice president of the New England Antivivisection Society delivered a lecture, "Vivisection and the Public Conscience," supposed to be an answer to my own lecture on vivisection.

The editor of one of the leading Boston papers kindly offered me two columns in which to make a reply but I took his suggestion that there was really nothing to reply to.

I now went on a tour of the country from New Hampshire to California, featuring "The Truth about Vivisection." On the evening of January 4, I went to lecture at the Academy of Music, Brooklyn, under the auspices of the Brooklyn Institute of Arts and Sciences.

On my arrival at the hall I was informed that a prominent antivivisection leader had notified the police department that police protection would be required during the lecture. I was also informed that although she was not a member of the institute, she had secured admission on a borrowed ticket, and had come prepared to disturb the meeting. I was asked if it would not be well to have her arrested at once, as she had already done enough to warrant this precaution. As her conduct suggested that this was perhaps just what she had come for, I said, "No, let her strictly alone." As a matter of fact, this woman behaved herself pretty well throughout the evening, and at the close came down to the platform and shook hands with me most cordially.

After the lecture, an open forum was declared, and a woman arose in the middle of the hall and began to talk. I raised my hand and said: "Excuse me, but this question is of such vital importance to the health and longevity of the people and the animals that we are going to have a change in the procedure this evening. I have given the audience my qualifications to discuss this subject. I have told what laboratories I have visited, what experiments I have seen, the names of the vivisectors I know personally and the literature I have read. I must ask any one who wishes to discuss the question with me to do the same.

"It is no crime to know nothing about vivisection, but if one undertakes to express opinions about it, it is very important that this audience shall know what those opinions are based on. Will you kindly tell us what laboratories you have visited?"

The woman protested that this had nothing to do with the case, and attempted to proceed. I insisted that before she could discuss the question, she must tell the audience her qualifications or admit that she had none. She got very angry, but I refused to yield the point, and finally she sat down with the remark, "I think I know just as much about the subject as you do. I don't believe that you have ever been near the laboratories yourself."

The audience was quick to see the injustice of this parting thrust, and there were cries of "Oh, oh" all over the house. Later I was informed that this woman was the president of a very prominent antivivisection society whose methods had been exposed during the lecture.

A few nights later when I was about to speak at Witherspoon Hall, Philadelphia, Mr. John Cadwalader in introducing me, read a powerful letter from Cardinal Dougherty, which concluded: "To forbid vivisection would be to hamper science, do a mischief to the human race, and foster misplaced sympathy."

On the Stage with Buster

While lecturing at the University of Chicago I had the unique experience of sharing the platform with "Buster," the little dog that for nine years had been assisting the university doctors in their study of gastric juice.

A decade ago, and under ether of course, Buster's stomach was divided into two parts, a large part and a small part, which were separated by a double layer of mucous membrane. In the large part digestion takes place as before, but now no food can enter the small part. The latter is known as a "Pavlov" pouch, because the Russian physiologist Pavlov first performed the operation. The pouch has a small hole in it, and the rim of this is attached to the rim of a similar hole in the wall of the abdomen.

When food is taken into the stomach, gastric juice is secreted not only there but in the little pouch also, and from this it can be drawn off into a cup or jar to be studied at leisure.

The antivivisectionists have published the most harrowing descriptions of dogs subjected to this operation, and these descriptions have been illustrated by still more harrowing pictures drawn from imagination for the purpose of moving subscribers to tears and contributions. After showing some of these pictures on the screen, I led forth the smiling little dog and held her up in my arms as proof that the illustrations in antivivisection literature are as misleading as the text.

Incidents connected with some of the California lectures were among the most amusing of the whole tour. My principal address in San Francisco was given on a pouring wet night, but thanks to splendid advertising and general

interest in the subject, the hall was crowded. Outside, braving the downpour with misguided loyalty, stood several women, handing out printed denunciations of the lecturer. These did little harm, however, for after showing a number of fraudulent documents issued by a certain antivivisection society, I called the attention of the audience to the fact that the denunciations had been prepared and sent by the same society.

I had hardly reached the platform when a tall man arose in the front of the house and asked to be allowed to read a statement. I told him that at the close of the lecture I would listen to his request.

He seated himself in the front row, and as I finished the address, he started to his feet, a pamphlet in his hand, saying that he would need five minutes for what he had to read. I demurred for a moment, then told him to go ahead.

Very pompously he half turned to the audience, but still addressing me, he said, "If you hadn't given me permission, I should have denounced you in every newspaper in San Francisco."

"In that case," I replied, "you may sit down at once, for you shall not read a word of it."

He started to protest, but the audience supported me vigorously, and two or three men sitting behind the offender put their hands on his shoulders and forced him into his seat.

A moment later he was on his feet again and started for the platform still protesting. He was getting to be a nuisance, so I stepped forward, laid my hand on his chest and shot him back into his place with the warning that if he attempted to disturb the meeting again I should have him removed. He was very quiet after that.

Questions were now fired from all points of the compass, and all those asked in good faith were answered in the same spirit. But some of the questioners were very funny.

One young woman tried flattery, and when she felt sure that that had lulled every possible suspicion, she began to ask questions as tricky as they were apparently artless. Not making much headway along that line, she dropped her mask and started out on a long discussion of the rights of animals which, she asserted, must always be considered and never under any circumstances be ignored.

Wears Shoes Only When Necessary

At this point I put in a little question of my own. "Do you wear leather shoes, madam?"

There was a pause while this question was being considered, and then came the reluctant and apologetic answer:

"Only when I have to."

This was too much for the audience; it broke into laughter which was renewed when the lady's attention was called to the fact that even vivisectionists did not usually wear their shoes to bed.

At Palo Alto, where I lectured at Stanford University, a man in the audience took up that same question of the rights of animals, and he too asserted that these must never be ignored. The following conversation ensued.

"Do you eat meat?"

No, sir I do not."

"Do you drink milk?" "No, sir, I do not. I live on vegetables and fruits. I have a large garden, and extensive orchards which I keep well pruned and sprayed and—"

"One moment," I interrupted, "what do you spray the trees for?"

"Why, to kill the insects," he answered.

"But insects are animals just as much as dogs and horses," I replied. "Do you think that you give proper consideration to their rights when you spray your trees?"

He had no answer to this, and I proceeded: "And I notice that you are wearing a silk necktie. Did you consider or ignore the rights of the silkworms that were baked to death in order that you might wear that tie?"

Santa Barbara was the only California city where my vivisection lecture was received with-

ERNEST HAROLD BAYNES was given three months to live if he rested in Florida or one month to live if he continued at his labors. He chose to keep working. The following poem, written shortly before he died, appeared in *The Outlook* a few days after his death.

THE LAST RACE *

By Ernest Harold Baynes

I have the mount on Courage today,
And Death is riding the White,
Through the paddock gate, with a smile at fate,
To the track in the slanting light.

The odds on Death are short, they say,
And how shall a sportsman choose?
There is just one test, you must ride your best,
Then you win, if you win or lose.

We face the flag on our hill-rimmed course,
It falls to a perfect start,
No waiting race—we must set the pace,
The pace that will break his heart.

On the long back stretch we lead by a length,
Old Courage asserting his pride,
Till Death shows fight and calls on the White:
He rides! for he has to ride.

As we swing to the straight, we are still in the van,
My horse at the top of his speed,
With Death's coming fast—we are nearing the last.
And the last is already decreed.

The horses, lapped to their saddle girths,
Rush through like a storm-swept fire—
Death wins! Bravo! But I laugh in his face,
As he noses me out at the wire.

* Copyright by Louise Birt Baynes

out heckling—where there were no questions even. The lecturer was given a unanimous rising vote of thanks. These facts were all suppressed in the false reports of the lecture published in the antivivisection magazines.

On my way east I again stopped in Chicago, where I lectured three times on "The Truth about Vivisection." One of the lectures was at Orchestra Hall, and at the close I had a most encouraging experience. Most of those who arose to their feet did so, not to protest, but to state that they were convinced of the rightness of my cause.

One of the first was a boy of perhaps eighteen, who stated that he was a student in a suburban high school. One of his women teachers on hearing that he was going to attend my lecture had said to him: "Why do you want to go to such a lecture? Don't you know that the doctors torture animals by cutting them up alive?"

"And she was supposed to be an educated woman," said the boy. "But I want you to know that you have convinced me that you are right; from this minute I shall be on your side."

As he sat down, a middle-aged man arose and said: "I came into this hall strongly opposed to vivisection, but during the past hour I have had my views very much modified. There are still, however, a few points I need to have cleared up for me, and I would like to ask a few questions."

Of course I was delighted to hear the questions, and I was glad to be able to answer them to his satisfaction.

Another man, as he passed me with his wife and family, called out: "No matter what we thought before, we believe in vivisection now."

St. Louis Doctors Win

But it was in St. Louis that a really decisive blow was struck, and it was my privilege to be present when it landed. The situation in that city was unique and ridiculous. The antivivisectionists controlled the city dog pound, and refused to allow the medical schools to buy any of the canine waifs for the use of their students.

It was explained to the sentimentalists that young surgeons must perform their first operations either on animals or human beings, and that if mistakes are to be made, it is better to make them on dogs than on men or women or children. It was further explained that all dogs used for these operations were given ether, and that most of them were killed with extra ether on the operating table before they recovered consciousness. It was pointed out that none but homeless waifs were required, and that since these were to die anyhow, it was much better that they should die useful rather than useless deaths. These explanations might as well have been given to the bronze statue of St. Louis in Forest Park.

Reputable medical schools cannot graduate their students without dogs. The St. Louis doctors were more than patient. They arranged to have stray dogs brought in from East St. Louis and other points outside. The antivivisectionists went one step too far; they began a campaign of intimidation. They posted detectives on the bridges approaching the city to turn back by threats or otherwise any one coming in with stray dogs for the medical schools.

Then a few real men, led by Dr. M. T. Burrows of the Washington University medical school, stood up and said: "Let's stop this nonsense." They drew up a bill, which if passed would enable properly accredited medical schools of the city of St. Louis to buy from the city pound as many dogs as they needed.

Of course it created a great stir. Hearings were held, both sides were heard, and an intelligent board of aldermen visited the laboratories to get first-hand information, and to see if the stories written and distributed by the antivivisectionists were true. They were found to be false.

One of the wild stories to the effect that in St. Louis laboratories dogs were fastened to the walls with spikes driven through their feet and that their mouths were then sewn up to prevent their screams from being heard, was proved to be a silly falsehood, and the proof of this did more perhaps than any other one thing to make the aldermen doubt the sincerity of the antivivisectionists.

But great pressure was brought against the aldermen. They were told that the operations they had witnessed were staged by the doctors for the special occasion of their visit, and they were flooded with literature which seemed to refute the evidence of their own eyes.

At this juncture I received an invitation from the chairman of the board of aldermen, asking me to appear before the board and state the facts of the case as I saw them. I gladly accepted the invitation, and on the afternoon of March 31 I was in St. Louis. I was able to tell the members of the board that what they had seen in the laboratories of St. Louis was not a staged performance, but the customary procedure which I had witnessed myself, not only in their city, but in many others from Massachusetts to California. I was also able to tell them that cruelty is not practiced in any American laboratory, and to give them first-hand information concerning some of the more recent medical and surgical triumphs due to discoveries made through experiments on animals.

A representative of the opponents of the bill was given an opportunity to answer me, which he tried to do, and five minutes later the bill was passed by the overwhelming majority of 22 to 4.

It was an historic occasion. For the first time the doctors made an aggressive fight rather than a defensive fight against their opponents, and they won hands down. They had shown what

may be done in any town, no matter how strongly the antivivisectionists are entrenched, provided there are a few men and women of the Roosevelt type who have sufficient strength of character to fight for truth and honesty and common sense, against falsehood and dishonesty and superstition.

More recently in Louisville, Kentucky, the medical schools have acquired the right to use stray dogs which would otherwise be destroyed just to get them out of the way. The local humane society was opposed to this plan, but finally yielded, and its president, a sincere and broad-minded woman, has set forth the circumstances in a very dignified article published by the society.

Superstition Dies Slowly

The superstition that it is more humane to destroy an animal for the sole purpose of getting rid of it, than to destroy it in the way which enables it to make a contribution to science, dies very hard. But it will die the faster as humane societies use greater care in electing to office the kind of people who use their heads as well as their hearts.

Shortly after my return from this trip I learned that the president of the American Antivivisection Society, who is also the editor of *The Starry Cross,* was to deliver a lecture before a club near Philadelphia. I went to hear him and was much amused by his scathing references to my own activities. At the close of his talk, which lasted nearly two hours, I was permitted to ask him some questions. His answers were so unsatisfactory that a few minutes later the club took unusual action.

Resolutions were offered and unanimously adopted, to the effect that the lecturer had entirely failed to make his points and that it was the sense of the audience that it stood for "vivisection and sane humane education generally."

[*The final installment of Mr. Baynes' exposé of the antivivisectionists will appear in the May issue.*]

Chickenpox

JOHN RUHRÄH

IN THE early days the eruptive fevers—smallpox, chickenpox, measles and German measles—were confused even by the doctors. They thought that the infant acquired some sort of poison in the mother's womb; that after varying lengths of time a sort of fermentation occurred in its body, such as they had observed in fermentation of wine, and that the eruption was an evidence of the body's ridding itself of the poisonous material.

This idea was incorrect, but when they likened infectious diseases to fermentation they came near the truth since both are caused by microscopic organisms. Centuries later Boyle, long before the modern theory of infections had been formulated, stated that when the secret of fermentation was discovered the secret of infectious diseases would also be found out. He was right, for after Pasteur explained the nature of fermentation he and others readily found out the relation between bacteria and such microorganisms, some of which had already been described in the infections.

Diseases Long Confused

The first to separate smallpox from this mixture of infections was an Arabian, named Rhazes. He lived from 860 to 932 and wrote a good description of the disease. The great English physician, Sydenham, in the seventeenth century, described measles, declaring that the disease did more to fill Charon's boat than smallpox itself. Later, a Sicilian named Ingrasias, in 1553, wrote a book on what he called "preternatural swellings," and in this he included a description of chickenpox, or varicella as the doctors call it. It is supposed that this was the first clear description of the disease. Forty years later Vidius described chickenpox as a variety of smallpox and ever since that time there have been some physicians who have held the same view.

Some people still make the mistake of confusing chickenpox with the milder cases of smallpox, or with varioloid, the mild smallpox that sometimes occurs in patients who have been insufficiently vaccinated. It was not until 1767 that the disease was definitely separated from smallpox by one of the greatest English physicians, William Heberden.

Develops Two Weeks after Exposure

Nowadays practically all physicians believe that smallpox and chickenpox are separate and distinct diseases, probably caused by two microorganisms closely related, like first cousins.

From fourteen to sixteen days after a child has been exposed to chickenpox—and the exposure in chickenpox need only be of the most transient character—he is taken ill, usually with a fever. On his body appear small blisters which look exactly as if a drop of water had fallen on the skin. They are clear and transparent and the skin around them usually is a

little reddened. After a short time the top of these little vesicles, as they are called, sinks in, becomes dark in color, and after a few days is replaced by a dark brown scab.

The eruption comes out in crops, some pocks appearing each day, usually for about four days. In some children there is intense itching. Eruption also occurs on the membranes and may be seen in the eye, on the nose and in the mouth and throat.

If the child scratches the vesicles, as he often does, they become infected and form little collections of pus, called pustules. When this occurs a small scar or pock remains. If left to themselves the scabs fall off, leaving perfectly normal skin underneath. But if the small patient scratches off the scab before it separates, naturally there is apt to be left a little pock mark.

Now chickenpox is ordinarily a mild disease, but it may be so severe as to cause death. Fatalities are most frequently due to skin infection or the development of erysipelas, but sometimes the pock marks become gangrenous, the skin dies and after a few days the patient also dies. In some cases the joints may become inflamed, and occasionally kidney trouble follows, so that while chickenpox is a mild disease and not usually to be feared, it is not to be taken too lightly.

The child should be carefully protected to prevent complications. He should be kept in bed until all the little vesicles have become scabs. This is usually from four days to a week. He may then be allowed up and if the weather is pleasant he can be out of doors, but he should never be allowed to mingle with other children until all of the scabs have separated. This usually takes two weeks, occasionally longer.

No Use Isolating Child from Family

If children in the same family have not had the disease, they should be kept from school because almost every child who has not had it and who is exposed will get it. If the other children have had the disease there is no reason why they should not be allowed to go to school, as there is no danger of a third person carrying chickenpox.

Isolation of the child in a room by himself with a view to preventing other members of the family from catching it is of no use because it always happens that the other children are exposed before diagnosis of the disease is made. Chickenpox is one of the most contagious of all diseases and attempts to isolate it, unless the isolation is carried out in a separate building, are never successful.

The most important feature in preventing complications is to keep the child clean; the nails should be closely trimmed, and the hands washed frequently if there are no eruptions on them. Keeping the child in bed during the period in which he has fever is important; various washes or ointments may be used to allay the itching.

Rarely do many pocks develop on the face but sometimes there may be a great many; if this occurs it is best to keep the child in a dark room until the scabs are formed, as the action of the light is thought to cause worse scarring in case any pock marks are left.

The Health of the Worker

LEE K. FRANKEL

ARE you a worker? If so, where do you work? In a factory, in a mill, in a mine, or are you possibly one of the so-called "white collar" brigade that works in an office? Whatever you are, you undoubtedly will be interested to learn what has happened in industry in the last century, and to see how much better off you are today than you would have been if you had lived a hundred years ago.

Has it ever occurred to you to think how your great-great-great-grandfather worked? His work was entirely different from yours. If you go back far enough, you find that your forefathers' work was almost entirely out of doors. In the very earliest days, of course, man's work consisted entirely of getting food. There was no such thing as agriculture or farming. He depended on his ability to kill animals, and to catch fish in the streams. Later he learned how to make the simple implements of the farm; but practically throughout all the years until about a century ago, the greater part of the work which our ancestors did was in the open air.

And then came the great change. The machine was invented and changed the whole situation. In order to make the machine economical, factories had to be built. Instead of working in the open on the farm, or working at home, numbers of people worked together in factories and mills.

Now what happened in the factory? Being crowded together with other people under bad conditions, in rooms poorly ventilated, working too many hours a day, human beings began to suffer from diseases that were directly due to their work. The factory manager and owner did not understand or know anything about modern hygiene. His primary purpose was to make money. It made little difference to him, in fact he didn't realize, that the man who worked ten and twelve hours a day was less efficient than the man who worked only eight hours a day. Again because he didn't know, he paid little attention to whether his employees were working in places where the lighting was bad, where the ventilation was poor, and where the general hygienic surroundings tended to injure them.

Very little was known about the processes that were dangerous. Take, for example, the lead industry. It probably was known in the early days that many workmen were taken sick and subsequently died. No effort, however, was made in these early days to improve the conditions. Even I can well remember that in one large city there was a hospital which expected every week to receive a number of patients from one of the large neighboring white lead establishments, who were, as a result of their occupation, suffering from lead colic.

The great improvement that has occurred within the last twenty years, and particularly within the last decade, is due to the knowledge we have gained about industrial conditions and their effect on health. This knowledge has been transmitted to many wise employers. They are realizing that both from the standpoint of efficiency and from the standpoint of humanity, it is highly desirable to keep workshops, mills, factories, and other workplaces in the very best sanitary condition.

What an Ideal Factory Resembles

Let us picture the conditions that prevail in an ideal factory. If you go through any large city or even a smaller town, you will see instead of the old-time dilapidated, ill-kept building, a spick and span modern plant. You will see that the greater part of the building consists of windows. In many cases, the building stands alone, so that it may get light and air from all sides. No longer is a lot of rubbish lying around on the ground. Instead, you see beautifully kept lawns.

What is true of the outside of the building is equally true of the inside. You will find all the newest types of devices for removing dust, such as ventilators and dust exhaust systems. You will find that the question of lighting has been studied and the right kind of illumination provided. You will find that seats adapted to the occupation are furnished specially for workmen.

If you investigate further, you will find every type of mechanical device in use, thus saving the worker as much as possible, and enabling the business of manufacturing to be carried on with the greatest efficiency. The machine has been introduced wherever possible, not merely because it works more accurately and quickly, but also because it saves the employee much unnecessary, hard and exhausting labor.

Employers are doing what they can in this direction—encouraging the invention of new machines, improving their equipment and substituting better practices for old-fashioned and outworn ones. Quite recently in a large locomotive plant I saw a man swinging a heavy hammer with which he was hammering out a red hot metal bolt. It was suggested to the

management that a small pneumatic press would do this work, and an order was immediately given to make this change.

It is also interesting to note how an effort is being made to make modern workrooms as attractive as possible. The walls and ceilings are decorated in a pleasant and harmonious color. Since pleasant surroundings increase the contentment of the workmen, every effort is made to keep the plant scrupulously clean and tidy. Order and neatness reign not only within the plant, but in the well-ordered factory or mill yard today, one rarely sees disorderly piles of scraps and refuse lying around loose. Many accidents formerly occurred in the yards of factories from this carelessness. Cleanliness in the factory for this reason means not only health but safety.

Then there are provided other things that you have in your own home, such as ample drinking water, sanitary toilets and washrooms. The worker in a plant such as we have described feels that everything possible is being done for his comfort, and as a result works more efficiently.

Plenty of Windows in New Factories

Among other matters the question of lighting has been given much consideration. This has been regarded not as a philanthropy, but as good, wise, common-sense business practice. In building the factory, effort has been made to get natural sunlight to the fullest extent possible. Where this has not been sufficient, careful study has been made and the kind of artificial lighting which will least harm the eyes of the worker is used.

Architects have learned the value of large window space. Recent studies have shown clearly that rickets in children is due, among other things, to lack of sunlight. If sunlight has such value for babies, it probably has equal value for grown-ups. For this reason, the really modern factory is built in the open. Daylight penetrates every part of the building. The windows, if possible, reach almost to the ceilings.

Many experiments have been made with lighting. Some recent ones show the excellent results that follow improvement in the lighting system. In one steel mill, output increased 2 per cent.; in shoe and textile factories, 10 per cent. In a steel mill, night output increased 10 per cent. after a more efficient lighting system had been installed. It dropped back again when the new lamps were taken out, and returned to the higher rate when the new system was restored.

In the modern plant the lighting system is so designed that we have correct intensity, good distribution of light and absence of glare. The lights are so arranged that they fall on the work properly. All machines and work benches receive adequate illumination and at the same time do not obstruct the light of other workers.

As a general rule there are no individual desk or bench lights, though in certain cases individual lights are necessary for drafting or unusually fine hand and machine work. When individual lights are used they are covered with a shade or reflector of such a size and shape that no beams from the light may fall directly on the eyes of the worker.

Since new and improved types of light are constantly being developed, it is now possible to secure satisfactory illumination under varying conditions of work. There is a separate system of lights for exits and stairways so that in case of an emergency, if the ordinary lighting system should fail, there would still be sufficient light in the hallways.

Ventilation Affects Health and Efficiency

Recent studies show that a poorly ventilated room affects unfavorably the health and efficiency of the workers in it. The causes of discomfort in a badly ventilated room are humidity, heat and lack of movement of air, and it is these conditions that are controlled and avoided in the modern plant. In the model workroom the temperature is kept at around 68 degrees Fahrenheit. In addition to regulating the temperature of a room we find that the humidity is kept at a comfortable point and that the air is kept in motion. In order to keep the air in motion, fresh air is constantly supplied. This is furnished either by means of natural ventilation, such as the ordinary openings in a building like windows, doors, transoms and air shafts, and in special cases by more elaborate mechanical ventilating devices.

Where large numbers of workers are employed or where injurious dusts, gases, fumes and humidity are produced, special machinery for the movement of air is used. Experts who install such systems use various kinds of fans, ducts or other special ventilating devices. Sometimes the air is modified by cleaning, filtering, washing, heating, cooling or humidifying.

These, then, are the essentials of the ordinary factory, mill or plant—good lighting, adequate ventilation, general cleanliness and proper washing facilities. But one who conjures up a picture of a modern factory that possesses these healthful conditions does not entirely see the industrial worker in the surroundings in which he works today.

The employer is concerned for the well-being of his workman and as a rule takes all possible precautions to keep him fit in every way, reducing as much as possible the dangers to life and health. For example, instead of using the injurious white or yellow phosphorus in the match making industry, the harmless compound of phosphorus is used. In like manner less dangerous compounds of zinc are being used instead of lead in the manufacture of paints.

In certain industries, shower baths and extra washing facilities are installed for the use of the employee. Engineers, architects, and sanitarians all have a part in planning his protection, and the number of these experts is increasing each year. The industrial revolution was with us toward the end of the nineteenth century and now in the early years of the twentieth century, we find ourselves in the midst of an "industrial evolution" the benefits of which to both employer and employee are daily growing more and more widespread.

Workman Is After Fair Play

A man who directed a vocational service in connection with a community welfare organization told me the following incident. Two positions with two different brass manufacturing companies were open, one paying several dollars a week more than the other. The director of the service discussed them both with the man who was applying for the job and to his surprise, the man showed his preference for the job that paid the lesser salary.

"I'll try for this one," he said. "They has a heart and takes care of their men."

Evidently the American workman is not so much after the "almighty dollar" as he is after fair play.

The modern employer is usually anxious for his men to be happy in their jobs, and well. He knows that the hours of labor affect not only the health of the worker but also his attitude toward the job. The length of the working day is a question still being considered. Years ago, when the shoemaker made the whole shoe, cutting out the leather and sewing the final stitch around the lacing eyes, there was variety in his work. And the neighborhood folks used to drop in and chat with him at his bench. No one minded working very much then, and longer hours did not bring the great amount of fatigue that the employee feels today, when he spends his whole time putting one particular screw in place on the machines that he is helping to assemble.

The modern system is, of course, more highly developed and produces greater financial return to both employer and employee, but it also brings with it a very wearing monotony which has a harmful influence on the body and spirit of the worker. To restore the balance which he needs in his life his hours must be shortened so that there will be sufficient opportunity for recreation after work is over. Whether the working day should be an eight hour day or an even shorter six hour day, as Lord Leverhulme suggests, is still a moot question. A great deal undoubtedly depends on the industry and process under consideration.

Lunch Room Cuts Down Sickness

A wit who spoke more cleverly than he perhaps knew at the time recently said that the whole family's happiness might be traced to the dinner table. The student of modern industry might very well claim that many a factory traces its esprit de corps and general spirit of good will among its employees back to its cafeteria or lunch room.

Employers are beginning to realize that proper food is essential to good health and thus they are providing cafeterias and lunch rooms as a part of the regular factory equipment. Studies have proved that such measures tend to cut down the sickness rate.

The modern cafeteria is one of the most satisfactory methods of supplying a quick meal to workers at a minimum cost to both management and employee. By this means large numbers can be served rapidly in limited space without overcrowding or undue haste. We find that the dietary of the industrial restaurant takes into consideration the special work of the employees. It is generally well balanced and varies from day to day, and above all furnishes at a low cost the food essentials necessary to good health. In our modern plants, then, nourishing food is given and this is served in an appetizing and

The factory lunchroom and cafeteria cut down the sickness rate. This is not strange when we see the quantities of green vegetables and wholesome foods that are prepared. This is the kitchen of the Marshall Field & Co. cafeteria.

International Film Service

A well balanced diet at low cost is the factory and store cafeteria aim. Between 4,000 and 5,000 employees eat each noon in the Marshall Field & Co. retail store cafeteria shown here. The average price of their luncheon is 22 cents.

attractive manner. Fancy the astonishment of our ancestors were they to hear of restaurant facilities in connection with their places of work.

But more wonderful to our grandfathers than the lunch room would undoubtedly be the medical department of the modern factory. White-tiled floors, white-washed walls, physicians in attendance, and nurses in white caps! Rest rooms and emergency rooms with all their necessary equipment! Dental clinics, optical clinics, and plant hospitals! Modern industry has indeed gone into the health business—its primary aim, to keep the worker fit. At the close of the war there were more than 900 medical departments and over 15,000 physicians on the pay rolls of industry.

The chief aim of the company's "medical" is to protect the worker from occupational diseases and preventable accidents. The most trivial injuries are referred to the doctor or nurse and even the slightest wounds are carefully dressed so there will be no disabling infection. Emergency treatment is given for any minor illness that occurs during working hours, and in many instances cases of serious illness are supervised and sick employees receive special attention. Cases of communicable diseases are immediately recognized and their spread is checked through the factory by enforcing quarantine measures.

In this way, the employer aims to reduce absenteeism, to reduce labor turnover, and to decrease the amount of poor and spoiled work that is turned out. He hopes, also, to increase production as a result of the more favorable mental attitude each worker has toward his job.

Regular Health Examinations Pay

Perhaps the most important phase of industrial medical care is the health examination that is given the workmen periodically. It has for many years been industrial practice to inspect plant machinery in order to detect signs of wear and tear and to avoid unnecessary breakdowns. But not until very recently has industry appreciated the value of regularly examining the men who run these machines. The importance of the human machine, whose worn out parts cannot be replaced, is now beginning to receive the attention it deserves.

A periodic overhauling will keep the body running and functioning smoothly long after indifference would have caused it to be scrapped. If no defects are discovered so much the better; but if physical impairments do exist, it is easier to cure them at the early stages of disease.

In a like manner applicants for jobs are examined so that they may be placed in the occupation best suited to their physical needs and so that no man may be taken on the payroll who, in any way, constitutes a health menace to his fellow workers. Such examinations also serve to cut down the industrial accident rate, as accidents often result from some physical infirmity which has escaped observation.

But when all is said and done, when working conditions in the plant are made as favorable as possible, we find that industry cannot entirely reckon without the individual himself. After all, what the worker does in his hours of leisure and rest—the pastimes he engages in, the food he eats, the condition of his home—all these have a tremendous bearing on his health. No matter how modernly equipped a plant may be, the health of the worker is not assured by this fact alone. The employer may guarantee healthful surroundings for eight hours of his day, but the workman himself has his other sixteen hours in charge. These must be lived according to the rules of health if the workman is to find himself at his best.

The great task which the public health movement faces at the present time is the need for stressing the individual's personal responsibility for his individual health.

An Afternoon with a Heart Specialist

WILLIAM DUNCAN REID

"BUT I assure you, Doctor, Lettie has never had any infectious diseases." "H'm," said the doctor. He wasn't convinced so he ran over the list to assist her memory: "Scarlet fever, measles, pneumonia, abscesses at the root of the teeth, infection of the nasal sinuses, chorea, tonsillitis, rheumatism."

"Oh, wait a minute," she gasped, "I didn't know those were infections. Lettie had rheumatism when she was ten and again when she was twelve."

"Ever any sore throat?"

"Yes, once in a while."

"How often, once a year?"

"Probably."

"And you think her heart is weak?"

"Oh yes, Doctor, that's what I worry about; our family have always had such weak hearts."

"There you are," sighed the doctor, "if a person thinks he has a bad heart he blames it on the antitoxin he was given when he had diphtheria or on his long suffering ancestors, when as a matter of fact if he would keep infections out of his throat antitoxin and ancestors might rest in peace."

Weak Heart Traced to Early Infection

The doctor scanned the physical examination notes laid on his desk by his assistant. "Sixteen years old—has had her tonsils removed—been able to keep up fair amount of athletics—excluded by school physician from basketball team—flushed cheeks—fine features—keeps up with her class in school work." He laid the report down.

"Lettie is a typical case of rheumatic heart disease. All local infections in the mouth must be guarded against; rheumatic symptoms must receive prompt treatment. Her exercise must be carefully supervised to be sure that she reaches only a moderate fatigue. When she has finished high school we must consult together carefully as to the type of work she will be able to pursue with the least strain on her heart. Lettie will be a little handicapped but don't let her ever feel she can't do worth while things; she must be allowed to keep her ambition and self reliance.

"About marriage—well, we don't have to worry about that yet, do we? And please bring Lettie in frequently so that I may know promptly if there is any renewed activity of the disease or change in her condition."

So it went through a long tiring afternoon, patient after patient, until when the last one had gone the doctor pulled himself out of his chair feeling like an old man. He was just sitting down to an entirely satisfying though late dinner when the doorbell rang again.

"If that's another patient," he called tensely to the maid retreating doorward, "tell him I'm up in the Maine woods fishing."

"I'll take a turn myself at this game of suppressing the truth and see how they like it," he added to himself. The doctor was still muttering when his friend and crony, Stephen Lackaday, came beaming in, to chat with him while he finished eating and afterward to continue a game of chess started the previous evening.

"Ha, Doc., talking to yourself is the first sign of a nervous breakdown. Come now, what was the last straw that broke you down?"

The doctor snapped at the phrase: "The last straw! I'll tell you. By some malicious fate I've had all day patients who were so hopelessly unintelligent in marking their symptoms or else so distressingly unskilful in expressing themselves that I've had to dig and ferret out information until my head is nearly bursting.

Some Imagine Their Hearts Are Bad

"I suppose you know I've limited my work to heart diseases; reason enough when heart dis-

ease now heads the list in the mortality statistics. The funny thing about hearts is that in many cases the persons who are the surest they have weak hearts are laboring under a delusion, and the ones who least suspect it are those whose hearts need treatment.

"For example, a patient gives me this history—rapid heart action with pain around the heart, shortness of breath, dizziness, oppression, cyanosed hands. Sounds like a bona fide sick heart, doesn't it? Well, it isn't. We call it effort syndrome, which means that due to some disturbing factor a set of symptoms appear simulating cardiac disease, although no impairment of the heart has occurred.

"Then there's the type of person who feels so well that he thinks he can impose on himself to the extent of working hard, eating heartily of rich food, taking no adequate exercise, and scorning vacations. It was a man like that who came in to my office a few weeks ago, an active business man of about fifty. He gave me this history—always been in splendid health (he was sent to me in connection with some insurance papers), absolutely nothing the matter with him, well just lately he seemed to tire a little easily, and perhaps he wasn't sleeping so well as he used to. Yes, occasionally he had a headache, but that was only in the last week or so. And yet the man had hypertensive heart disease—high blood pressure and enlarged heart. He died suddenly from a stroke of apoplexy shortly after."

Stephen broke in, in a worried tone of voice: "See here, anybody could have a set of symptoms like that. Do you wish us all to worry ourselves into an early grave whenever we have a slight indisposition?"

The doctor looked as if he were going to score a point. "No, Stephen, old man, it merely comes back to the thing we are always urging—have a periodic examination by your doctor and *don't* worry."

Stephen looked relieved. He began to think of the chess board so he prodded the doctor: "And that last straw you started to tell me about?"

Didn't Tell Doctor the Whole Truth

The doctor hitched round in his chair impatiently and frowned: "Yes, that last straw. I told you how wearing my work seemed this afternoon. Well, when the last patient came in and I began questioning him, I gave a great sigh of relief. I thought what a blessing such a patient was to a doctor—all his answers concise, promptly given, clear and intelligent. I would surely get through with him in record time.

"The only trouble was that when I appeared to get through he hadn't anything the matter with him except that all of a sudden, out of a clear blue sky, his heart lay down on its job. Now, with all their fabled inconsistencies, hearts don't lie down on their jobs without good and sufficient reason. So my elation fell and I realized that I was dealing with the worst type of patient, the one who suppresses the truth. I took the challenge and proceeded to find my causes in spite of the patient. When I finally worked round to testing his blood, I could see that he knew that I knew and so he told his story.

"He had had a syphilitic infection many years ago which apparently had been cured by treatment prescribed by a physician. I have already started treatment on him to check the further advance of syphilis but I have small hope of helping him greatly. It has already so badly impaired his heart that probably he will live but a short time. The curse of that disease is that it lies latent and unsuspected in the system for an average of sixteen years before symptoms of heart disease occur."

"But you said he went to a doctor when he first contracted the disease. What more could he do?" interrupted Stephen.

"If he had known, as I earnestly hope every one will know some day, the endless tragedies accruing to syphilis he never would have run the risk of contracting the disease. Having once contracted it, he was too easily satisfied of his cure. We doctors aren't infallible; it is better in the presence of a serious condition to get an opinion from more than one doctor."

Fighting the Heart Disease Menace

Stephen was looking very thoughtful; he had forgotten the chess game. "You seem to have on your hands, you cardiologists, a great responsibility, to educate the people so that they may cooperate intelligently with their doctors in lessening the menace of heart disease. What is being done along that line?"

"Well," said the doctor, "there are several means we are using to accomplish this. There are cardiac associations where doctors, nurses, social workers, and all directly interested in the subject may meet and discuss old and new findings. There are cardiac clinics where specially trained physicians, ably assisted by social workers, can treat the patients and educate them to the best methods of living, and to occupations and exercise suitable for each particular case. Then perhaps most far reaching of all are the health talks published by almost all the leading daily papers of the country."

"The leading dailies," sniffed Stephen, "print the most unutterable piffle."

"Now, Stevie, you're getting old and peevish and I'm going to drive you home. But if you want to finish that chess game tomorrow night, don't get me started talking hearts the minute you get in the house."

The Conquest of Yellow Fever

ARTHUR ISAAC KENDALL

THE GREAT achievement of the Spanish-American war was not a victory of arms; it was the conquest of that formidable disease of the American tropics, yellow fever.

Hidden within this history of the American occupation of Cuba is one of humanity's great romances. It centers around a group of devoted men from the United States Army who, provided neither with offensive weapons nor defensive armor, entered into conflict with an unknown, mysterious microbic foe, the ominous yellow jack. The martyrs of this band, who offered their bodies for inoculation with the deadly virus of yellow fever, gave their lives freely in the interest of humanity. The leaders who traced the tortuous trail of the "scourge of the tropics" from infected man through infected mosquito and back to man again toiled within the baffling, silent, unavoidable and ever present shadow of death.

The great general who followed the devious and insidious path of the disease in the ranks of the non-immunes and for the first time waged successful warfare against yellow fever was not acclaimed a popular hero at the close of the campaign. Nevertheless, the conquest of yellow fever was the greatest triumph in the history of tropical medicine. It paved the way for the completion of the Panama Canal and transformed the pestilential American tropics into a health resort. The conqueror of yellow fever, the liberator of the tropics, was America's greatest sanitarian, William Crawford Gorgas, late surgeon general of the U. S. Army.

Yellow fever, the dread yellow jack of the sea-faring man, is well known by name and ill repute to every man and woman in the United States. It is characteristically a disease of the tropics and subtropics, although cities as far north as Philadelphia (1793), and Lisbon (1723, 1850, 1856), have been visited by it at irregular intervals.

It is peculiarly an American disease, ranging from the gulf coast to southern Brazil on the east, and from Mexico to Chili on the west, although the tropical coast of western Africa is said to be infested. Both the Aztecs and the Mayans seemed to have suffered from yellow fever in epidemic form as early as 1450, and many of Columbus' sailors died in San Domingo (1495) from a disease that agrees in essential clinical details with yellow jack.

Prior to the Spanish American war the mode of spread of yellow fever was wholly unknown. Unlike most of the contagious diseases, which spread directly from man to man, cases of yellow fever have occurred on ships anchored a quarter of a mile or more from the shore. In some well authenticated instances the sailors have had no communication whatsoever with the land. Men-of-war, upon which the most exaggerated cleanliness prevails, are known to be no less liable to invasion than the most primitive sailing ship. On the other hand, men may handle the nauseous black vomit of patients about to die of yellow fever, or sleep in the soiled blankets and bedding used by desperately sick cases, with impunity; and yet, rich and poor, exalted and humble, alike fall victims in infected areas.

In countries where yellow fever is habitually found, the native inhabitants seem to enjoy life-long immunity to the disease. Now it is known that in such places the very young children become infected, but the symptoms at this tender age are somewhat different from those manifested in adults. Since recovery from infection with yellow fever leaves life-long freedom from the disease, the apparent absence of yellow fever among native adults in these infected areas is readily understood.

With all of these perplexing but well established facts to explain, yellow fever remained a mystery of mysteries among contagious diseases until Dr. Henry Rose Carter, of the United States Public Health and Marine Hospital Service, found that secondary cases of yellow fever followed the primary cases only after an interval of at least two weeks.

The circumstances which led to this illuminating discovery illustrates that trite saying of Pasteur: "Chance favors only the trained mind." A case of yellow fever, brought from without, developed in a small town in the south, in which Dr. Carter fortunately happened to be present. No new cases appeared for more than two weeks. Then several occurred within a very short time. Some of these were in neighboring houses; several had no known communication with the original case. Dr. Carter recognized this unusual interval between the first and succeeding cases, and published it.

Learn Mosquito's Rôle in Infection

With this remarkable observation in mind, men from the medical corps of the army, Drs. Reed, Carroll, Lazear, and Agramonte, found the missing link which binds a primary case of yellow jack to succeeding secondary cases. They found that a very special mosquito, known variously as Culex fasciatus, Stegomia fasciata, and

Aedes calopus, was the carrier of the yellow fever virus from man to man. Sadly enough, only the females of that particular kind of mosquito could be implicated. The males, unprovided with the requisite mouth parts to bite mankind, are modest, harmless, retiring vegetarians.

The army doctors also discovered that the virus of yellow fever is present in the blood in the skin of a patient only during the first three days of the clinical disease. The virus is securely locked up within the body and cannot escape to other men unless some of the infected blood is deliberately withdrawn and injected into the prospective victim. This the female mosquito, quite without malice, does. It requires at least ten to twelve days for yellow fever microbes to pass from the stomach of the mosquito to her salivary glands, whence they enter the blood stream of the prospective victim at the time of biting. This explains the relatively long interval between the first and secondary cases described by Dr. Carter.

The question may be asked, "Why does the microbe of yellow fever take such a long time to go as short a distance as that between the stomach and the proboscis of the mosquito? And why does the microbe settle down in such a tiny structure as the mosquito's salivary gland?" We do not know. In malaria, however, which is also carried by female mosquitoes, but of another kind, the details have been worked out.

After four days or thereabouts, following the injection of the virus of yellow fever by the mosquito, the characteristic chill occurs in the new victim and the disease is on. For three days thereafter the insects may obtain the yellow fever virus from the new case and, after a proper interval, infect yet other non-immunes and thus perpetuate the disease.

From Pest Hole to Health Resort

General (at that time Captain) Gorgas put these several facts into one general coherent plan, and began to rid Havana of yellow fever. It must be remembered that Havana had been infested continuously with yellow jack for at least four centuries. Captain Gorgas did four things:

1. He had each person infected with yellow fever, as soon as the disease was discovered, placed in mosquito-free, screened wards in a hospital, and kept there until all possible danger of infecting new mosquitoes had passed.

2. Each house from which a fever patient was taken was thoroughly fumigated, care being taken to prevent the escape of any mosquitoes present.

3. The breeding places of mosquitoes were carefully oiled, or eliminated, to prevent new crops of the pestiferous insects.

4. All non-immunes were ordered to report at once to headquarters if they felt the slightest chill, or symptoms that might develop into yellow fever. Of course their quarters were fumigated.

The results were marvelous. Havana, the pest hole of the tropics, became a health resort.

The astonishing feature of all this remarkable program was that during all this time the virus of the disease remained undetermined. It remained for an eminent Japanese investigator, Dr. Hideyo Noguchi, to bring the actual microbic criminal to the gaze of mankind, nearly two decades later.

When the Panama Canal was taken over by the United States, Panama had inherited the crown of bad repute that so long had stigmatized Havana, and it was but natural that Colonel Gorgas—for Congress had for once recognized in fitting manner a nonmilitary achievement and promoted Captain Gorgas for his splendid work—should be chosen to lead the fight against yellow fever on the Isthmus of Panama.

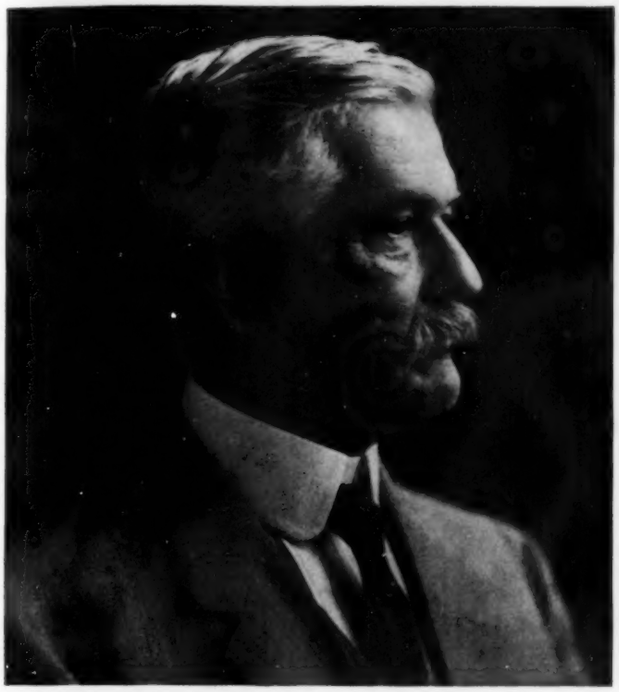
This was a much more gigantic task than that in Cuba. The populations of two large cities, Colon and Panama, situated in foreign territory although under nominal United States control, had to be cleaned up, and provision made for the reception of several thousand laborers, many with doubtful immunity to yellow fever.

The usual four steps, enumerated previously, sufficed to rid Panama of yellow fever, although two years elapsed before the requisite force and supplies could be mobilized to accomplish the result.

Test Made on Canal Laborers

Perhaps the most unique feature of the Panama campaign was the investigation of the susceptibility of the prospective day laborers to yellow fever. These came mostly from the islands of the Caribbean Sea, Martinique, St. Lucia, and others. It was supposed that these people were immune to yellow fever, but of course surmise is a poor substitute for real information. Since hundreds were to be brought to the Isthmus, Colonel Gorgas ordered experiments to be made to determine their susceptibility. The experiments were simple and direct.

First, mosquitoes of the proper kind and sex were raised from eggs to insure freedom from possible unknown infection. Secondly, these hand picked and selected mosquitoes had to be infected from known cases of yellow fever at the proper stage of the disease. At the time these observations were made, there were plenty of cases in Panama to select from. The method of infection was simple. The mosquitos, deprived of all food for three days, were placed in wire cages so arranged that the patients could place an arm in the midst of the insects without danger of any escaping. About a dozen



The late Surgeon-General William Crawford Gorgas, conqueror of yellow fever and liberator of the tropics.

insects were kept in each cage, and carefully watched. It was a very simple matter to know when the mosquitoes had fed; their abdomens became red and greatly distended; they then were readily induced to retire to the sides of the cage, being too heavy to fly about very much.

For three weeks thereafter these infected mosquitoes, nearly 700 in all, were carefully tended, and counted daily. Their food was bananas and water. One of these insects remained alive 103 days after her captivity began. Many perished within six weeks.

One morning a single mosquito was missing. A frantic search was kept up for nearly two hours without success, and the entire doubly screened room they were kept in was about to be fumigated to prevent accident when the lost insect was discovered dead between the netting of the cage and its wooden frame. It is needless to refer to the relief felt by all when the roll call was complete. An escaped, infected mosquito might do much mischief among persons not immune to yellow fever. Although these mosquitoes managed to eke out an existence on their somewhat unusual diet, they gave evidence of unalloyed enthusiasm when an incautious arm or hand approached their prison bars.

Infected Insects Feed on Men

When all was ready, an even dozen of laborers were selected from 300 arrivals on an incoming steamer from Martinique. The nature of the experiment and the risk they took in submitting to inoculation with infected mosquitoes was explained to them and they signed the necessary legal papers in testimony thereof.

They were taken across the Isthmus in covered and screened ambulances and hospital cars, and placed in doubly screened houses under guard for two weeks' observation, to be certain that they were free from infection. Then they were bitten by the infected mosquitoes. Even though the mosquitoes were undeniably very hungry, they manifested a strange reluctance to bite, which made it necessary to wash the arms of the men with soap, then alcohol. Apparently, the skin of the Martinique negro has some odor, repellant or distasteful to the insects.

To make a long story short, not a single case of yellow fever appeared among these twelve men, even though the last man was bitten simultaneously by twenty-six apparently infected and infectious mosquitoes. It might be argued that after all the mosquitoes were not infective, but since not a case of yellow fever developed among the hundreds of laborers, and also since certain control experiments indicated that at least some of the insects could transmit the disease, the practical result seems unequivocal.

Yellow fever was exterminated from the Canal Zone in October, 1906, and to this day it has never regained a foothold, a truly marvelous result.

General Gorgas demonstrated yet again his mastery of yellow jack. He was not content. His ambition was to exterminate yellow fever from the face of the earth, and to make the tropics safe for mankind. What grander, what nobler, what more heroic dream has mortal man ever held!

General Gorgas Dies

The World War intervened, and his time and energy were given without stint to the herculean task of expanding the medical corps of the army from some 600 to more than 30,000 members. When peace prevailed, he turned again to the realization of his mighty project. He became the chief of the yellow fever board of the International Health Board and lived to see Guayaquil, the third great pest hole of the American tropics, freed from the cruel grip of yellow fever, and the work progressing in other infected points.

Death, unmindful of the needs of humanity, cut him off in the prime of life, while he was in London on his way to Africa to investigate the occurrence of yellow fever there. Our great allies, the British, accorded him a military funeral in St. Paul's, a splendid tribute from our appreciative friends.

The general has passed away; the greatest of sanitarians has not lived to witness the realization of his truly majestic plan for the emancipation of the tropics, but the spirit he instilled moves on, and the conquest of yellow fever, the greatest romance of medicine, has progressed far toward accomplishment.

Proper Care of the Hair

ONE OF the most important questions in dealing with scalp hygiene is the character and frequency of shampoos. If the hair is very oily, soaps containing considerable quantities of free alkali may be employed. Recourse may be had to the use of green soap, or the tincture of green soap. Some skin specialists recommend that this be used several times a week, but as a rule, once in every three to seven days is sufficient. Care must be exercised to wash all of the soap out of the hair by repeated rinsings with clear water; otherwise the alkali is liable to remain, and the hair will become dull, stringy and lusterless.

The scalp should always be thoroughly dried immediately after the shampoo. The best means is a soft towel or exposure to the air. Wet scalps are a frequent source of early baldness. Use of hot air blowers and similar speedy and radical aids is to be condemned.

If, after washing, the scalp feels dry and harsh, a little vaseline or olive oil may be applied gently with the finger tips.

If the hair is not excessively oily, soaps of the neutral type, such as Castile, are best. The soap should be divided into fine shavings, and natural soft water is preferable.

With respect to frequency, a shampoo once a fortnight for men, and once every three weeks for women is a safe general rule.

"Egg shampoos," only the yolk being used, are quite popular in Great Britain. Any curative property that they may possess is probably due to the minute amount of sulphur contained in the yolk. Needless to say, applications of this sort are of questionable therapeutic value.

Hair Dyes and Bleaches Harmful

Hair dyes, no matter under what guise they may parade, generally contain harmful and even dangerous chemicals, and are mentioned here only to be condemned. Bleaches, likewise, are detrimental.

The practice of hair bobbing has been widely criticized, but from a hygienic viewpoint, it is a wise step. Thus abbreviated, the hair is much more readily cleansed and dried, and the scalp is rendered more accessible for the application of soap and water.

Few diseases are so common as those that involve the scalp, and few are so often neglected. Dandruff, which is usually a part of seborrhoeic dermatitis, is the most frequent offender and is characterized also by the presence of itching of minor degree. This disorder is probably the most widespread of all cutaneous diseases. Infection usually is carried by means of dirty brushes and combs. Articles of this kind may be made fairly innocuous by means of alcohol, although exposure to moist heat is far more dependable and reliable.

The Proper Comb and Brush

Brushes with sparsely set bunches of stiff bristles are to be preferred. Combs with wide, thick, rather blunted teeth are best. The so-called "fine tooth comb" is an abomination. Individual combs and hair brushes are as essential to cleanliness and refinement as individual tooth brushes.

Singeing of the hair is both harmful and useless. Curling and waving also are detrimental to healthy hair growth.

Massage, as commonly practiced, is liable to do more harm than good. The principal object of manipulation should be to secure a good flow of arterial blood to the part, and not to spread the bacteria, whose normal habitat is in the outer layers of the scalp, by rubbing the surface of the skin.

In those cases of scalp disorder that are associated with excessive oiliness, and particularly with thinning and tightening of the underlying structures (the so-called hide-bound type), the prospect for permanent relief is not good.

HYGEIA

A JOURNAL OF INDIVIDUAL AND COMMUNITY HEALTH

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Plain Facts about Health and Disease

HEALTH NEWS OF THE MONTH

Hexylresorcinol—New Germicide

Late in February, newspapers throughout the country carried column items with feature headings relative to the discovery of a new germicide in the Johns Hopkins University Medical School. These stories were released through various news syndicates, and, in general, were quite in accord with the facts relative to Dr. Leonard's discovery.

Hexylresorcinol was described by Dr. Leonard at the meeting of the American Medical Association held in Chicago last June. It was developed in the Johns Hopkins University in an attempt to discover a compound that could be taken by mouth and that would act as an antiseptic in the urine when excreted from the body. From time to time other substances have been developed for this purpose, but thus far none has fully justified its use.

The new product was thoroughly tested on animals and on normal men, and then applied to cases of infection in the kidneys and the urinary tract. It was the opinion of those who studied the evidence offered in connection with the first description of the drug that it gave promise of proving a most useful remedy, but that the results ought to be fully confirmed by other investigators before the product could be considered as fully established.

Hexylresorcinol is not, therefore, as was claimed in some of the newspaper headings—"an antiseptic that would kill all forms of infection in the body." No such claim was made for it by the investigator. It will not kill germs that are circulating in the blood when the drug is taken by mouth; neither is it effective in diseases that are not caused by bacteria directly, as for example, diabetes, in which sugar appears in the urine.

In the present state of investigation, hexylresorcinol cannot be injected directly into the blood and no claims are made for the product beyond the fact that, taken by mouth, it has an antiseptic and bactericidal or germ-destroying effect in the urine on certain forms of bacteria.

It is interesting to note in this case that such newspapers as the New York *World*, the *Sun* and the *Herald-Tribune*, each of which commented editorially on the announcement of Dr. Leonard's discovery, sounded a note of warning as to the early stage in which the discovery now stands.

National Collection of Bacteria

An unusual museum is about to be permanently established through the action of the National Research Council and the General Education Board. As a result of this provision of funds, the McCormick Memorial Institute in Chicago will be made the repository for five years of a collection of specimens of all the bacteria thus far isolated by specialists.

Some time ago the collection of tubes of bacterial cultures was begun in the Army Medical Museum. This collection is to be transferred to the McCormick Institute as a nucleus for the complete collection in the building of which all of the learned societies will cooperate.

Obviously, here is a museum that is unique in every sense of the word, and that will afford opportunity for study and investigation of great importance in the control of disease.

Vienna's Marriage Consultation Bureau

Two years ago, the city of Vienna established a municipal marriage consultation bureau as a sub-department of its public health service. Recently, at a meeting of physicians in that city the facts discovered during the two years of operation of the bureau were brought to public attention.

It had been found that 25 per cent. of the applicants for information and advice were in good health. Of the 75 per cent. who were sick, one fourth suffered from venereal disease, one fifth from diseases which made consummation of marriage impossible, and about 15 per

cent. from tuberculosis. Many women applied for advice on birth control.

In giving advice as to whether the applicants might conscientiously marry, the physicians were compelled to concern themselves with two main considerations: (1) the interests of the inquirers themselves; (2) the collective interests of society.

For example, the advisers felt that marriages between relatives when the family is known to have a history of hereditary disease, and marriages between two parties, both of whom have the same hereditary taint, were inadvisable because the probability of inheritance of such taints by the offspring is almost 100 per cent.

They did not feel on the other hand that certain types of obesity, of diabetes, or of certain forms of disturbances of the eye or ear were necessarily contraindications to marriage, although in such instances the production of offspring might not be advisable.

Of chief importance in the giving of advice was the dissemination of proper information concerning venereal disease and the dangers of marriage in such cases; also of tuberculosis. Austria has not a law for compulsory examination before marriage, but the voluntary bureau has rendered a valuable service during its first years of operation.

Menace of Poorly Fitted Spectacles

Extensive observations by many physicians and experiments done on animals have indicated beyond a doubt that repeated irritation of the skin plays some part in the production of malignant tumors, such as cancer, in many instances.

In this connection, attention has been called to the fact that in at least four cases observed at New Haven within recent years such tumors developed at spots which had been repeatedly rubbed by poorly fitted spectacles. The places where badly fitted glasses usually produce constant bruising of the skin are the bridge of the nose, the sides of the bridge near the inner angle of the eye, the temples, and at the back of the ears. It has long been known that the greatest hope in the prevention of cancer is the elimination of such contributory factors as repeated bruising or irritation, and that skin cancer can be completely eradicated if seen early and completely removed by radium, the x-ray or surgical measures.

There is no indication that spectacles of the "pinch-on" type are any more likely to cause such rubbing than are those that have the ear pieces. In any event, the possibility of such irritations resulting disastrously should be borne in mind.

M. F.

A FRAUDULENT CONSUMPTION CURE

THREE brothers, living in Denver, have for some time been exploiting two pieces of quackery, each of which the U. S. government has declared fraudulent and barred from the mails.

One of the schemes was a crude and indecent fake known as the Vital-O Gland Company. The other was an alleged cure for consumption, sold first under the name Haelan and later as Heilol, and described as a "guaranteed treatment for tuberculosis."

The advertising featured an alleged "prominent Denver physician" who it was claimed highly endorsed the Haelan or Heilol treatment. Government investigators found that the man was not a physician but an osteopath who got a commission on every bottle of the nostrum that was sold.

The stuff was advertised as a product "developed by scientific research in the laboratories of Vienna and Zara." This also was false. It was made by an Austrian alien who first peddled it in Washington, California and Oregon and finally went to Denver, where he met the osteopath described as the "prominent Denver physician." The Austrian sold the product as a "stomach remedy"; the osteopath, apparently invested it with its alleged virtues as a consumption cure. It was a water-alcohol solution of extractives of fruits, barks, roots and herbs.

The Austrian sold the "remedy" to the three brothers for $1 a bottle, who in turn sold it to consumptives for $6 a bottle. This business took in over $22,000 during the first five months of 1924. On November 26 last Postmaster General Harry S. New, on the recommendation of the solicitor of the post office department, Judge Edgar M. Blessing, signed a fraud order forbidding the postmaster at Denver to pay any postal money orders drawn to the Heilol concern and requiring him to return all mail addressed to the company, after stamping plainly on the envelopes the word "Fraudulent."

A. J. C.

TYPHOID IN THE LARGE CITIES OF THE UNITED STATES

FOR thirteen years, *The Journal* of the American Medical Association has been publishing annual statistics regarding death from typhoid fever in cities of the United States of more than 100,000 population. Our metropolises have come to vie with one another for a place of

honor in the annual roll call. It is well known that the deaths from typhoid fever constitute an index to the sanitary conditions in the community.

The analysis for 1924 shows that geographical location has a considerable bearing on the incidence of typhoid fever. The cities of the New England group had exceedingly low rates—Fall River and Hartford reporting no deaths whatever, and being the only two large cities in the United States to show a perfectly clean typhoid slate. Providence has had a fine record for four years and New Haven has had the highest rate of any city in the New England group for three years in succession.

Among the cities in the Middle Atlantic states, Trenton deserves mention for a low rate in 1924, whereas its rate in previous years has been high. The oyster typhoid epidemic gave New York a higher typhoid mortality than for several years; 650 excess cases of typhoid occurred in that city as a result of the oyster infection. Washington, D. C., had about 50 cases of typhoid due to the same cause. Rochester and Syracuse maintain excellent records, but Camden has had a higher typhoid average for the four years, 1921 to 1924, inclusive, than for the ten years preceding. Albany had a considerable excess of typhoid in 1924.

Richmond, Baltimore and Washington, among the cities of the Southern Atlantic states, report the lowest typhoid rates in their history.

Considering next the cities in the Central states, Indianapolis and Toledo continue to show high rates, although beginning to approximate more nearly what might be considered a normal incidence of the disease. Louisville and Birmingham have rates exceedingly low, whereas Nashville and Memphis produce figures so amazingly high as to require special investigation.

The cities of the West Coast maintain the same relative positions that they have occupied in the last ten years, but on the whole do not show up as well as do cities on the Atlantic seaboard.

M. F.

THE BIG MUSCLE BOYS

IN THIS issue of HYGEIA, we begin the publication of a series of articles dealing with exercise and the development of the muscular system of the human body.

Before taking up the positive side of the matter, before showing how the human system may be brought to an adequate state of physical development, we propose to indicate to our readers the basis on which present mail order systems of physical culture are conducted and the manner in which the public is led into the belief that there are short-cut methods to proper physical development, independent of the simple rules of hygiene that are the very foundation of personal health.

It is interesting in this connection to find in the *American Mercury* for March the statement of a photo engraver, employed by a firm that seems to thrive primarily on "before and after" pictures for fakers of some type or another. As to the methods used by the mail order physical culture instructors in preparing their literature, Mr. Alvin F. Harlow, author of this article says:

> Some of the most artistic of these ante-and-post jobs have been done on the supposed pupils of direct-by-mail physical culture instructors. Put a man of average physical development into the hands of an expert commercial photographer, and miracles can be worked with him. He must have two bust photographs made, bare to the waist. In the first he folds his arms loosely or lets them hang dejectedly by his side, lets his shoulders slump forward, and assumes a woe-begone expression.
>
> The artist now takes charge of the print, puts the touches about the face that make it thin, and adds a number of light strokes across the trunk to indicate the position of every rib, thereby making the subject look like a famine sufferer. The outline of the arm muscles can even be reduced by a skilful retoucher.
>
> This done, we have before us a weak, anemic individual who, before he began taking daily exercises, was without ambition and without hope; who had scarcely strength to drag himself to the table, and when he got there, dared eat nothing heavier than milk toast, because of his poor digestion.
>
> But now the subject poses again—not only on the same day, but perhaps within five minutes of the time of making the other picture. He folds his arms tightly across his chest so as to bulge the biceps upward and throws his shoulders back in a peacock strut, meanwhile assuming a proud, confident, self-satisfied expression. Or he may extend his arms outward from the shoulder and bend the forearms upward in a sort of square-cornered letter U; the fists are clenched tightly to swell the arm and shoulder muscles, and as he is photographed against a dark background, the artist finds it easy to enlarge these muscles by the clever use of a little white paint.
>
> The finished job represents Mr. Anthony Heckenspeck, of No. 999 East 136th Street, New York City, before and after indulging in Professor Hercules Milo's physical culture correspondence course of twenty weekly lessons.
>
> The photographs are accompanied by a testimonial letter from Mr. Heckenspeck, in which he declares that the benefits obtained have been so great that if the course had cost him ten thousand dollars ($10,000) he would say that it was money well spent.

Any one who will look over the literature that he will receive in response to the coupons published in the magazines that promote such mail order courses through the sale of their advertising pages will find plenty of reason to believe that Mr. Harlow tells the truth.

In forthcoming articles in HYGEIA, we hope to bring to the attention of our readers the actual facts regarding the development of the muscular system by real experts in physical training associated with the great universities of this country. They will tell the simple methods used in such institutions. There will, of course, be further analyses of the claims of those who would exploit physical training for commercial gain. M. F.

THE SHORTAGE OF COUNTRY DOCTORS

MEDICAL educators met in Chicago at the Annual Congress on Medical Education, Licensure, Public Health and Hospitals held under the auspices of the American Medical Association, and spent a lively session trying to discover some method on which all could agree by which the shortage of country doctors could be overcome.

It was quite generally agreed that the number of physicians in rural districts is relatively less today than formerly and that economic and social conditions play a large part in bringing about the present situation. Physicians who have devoted anywhere from seven to ten years and spent anywhere from $6,000 to $12,000 in securing a satisfactory medical education hesitate to go to those country districts in which the returns may be poor, the educational facilities weak, the community backward in social and esthetic matters and the opportunity for personal development very slight.

In this connection, Prof. William L. Bailey of the department of sociology in Northwestern University said: "Revolutionary changes are in process in every section and in every phase of rural life. The traditional unprofitableness of agriculture and the unattractiveness of rural life generally have been intensified by post-war conditions, as well as by contrasts with the rapidly growing towns and cities."

It is his belief that the number of persons leaving the rural districts has doubled in rate, and that good roads, cooperative marketing and consolidated schools have not altered the general trend from the country to the city but have, in fact, seemed to enhance it.

Professor Bailey considers the health care of the rural population one of the most important factors in keeping persons on the farm, and believes that the only hope at present lies in the extension of medical field service. Such a field service might be substituted for the internship, he believes, permitting the young graduate to act as medical assistant to a rural physician. Schools already have undertaken extension to rural districts, he told his audience, and medicine and the church must also consider this possibility.

Dr. William Allen Pusey, president of the American Medical Association, who has led the fight for increasing the supply of physicians through the lessening of the present requirements for premedical education, urged that the graduates now being turned out in medicine are not, except in rare instances, doing the ordinary service of medicine.

"If we are going to produce medical men who will do the traditional service for society," he said, "we will have to put the minimum price which they pay for this privilege at a point where the demands which the doctor has a right to make of society will not be above its ability to pay. The reduction in the time requirements of medical education does not necessarily mean a superficial course."

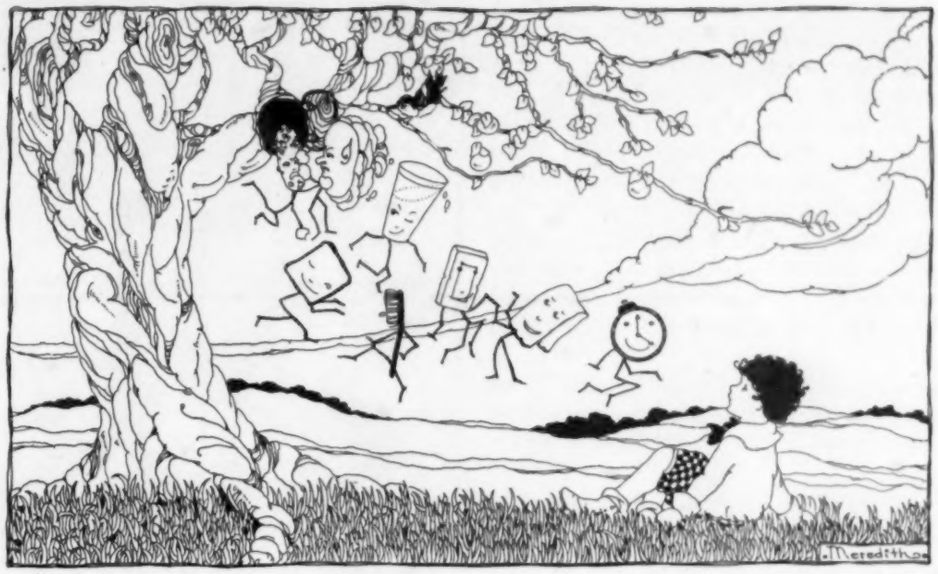
It was his belief that an apprenticeship in practice as a requirement for licensure would make up for some of the present deficiencies. Medical education, he said, now is excessively expensive to the institutions giving it. From being the poor relation of education, medicine has become its spoiled child. Because of the excessive material demands made on medical schools, Dr. Pusey pointed out, only the large schools of enormous income are able to survive, and many of the less highly endowed schools have been compelled to go out of existence.

Dr. E. P. Lyon, dean of the University of Minnesota medical school, presented conditions in Minnesota, as determined by a recent survey.

"There never was a time," said Dr. Lyon, "when the entire population of Minnesota had adequate or convenient medical service, and conditions are better now than ever before, due chiefly to improved methods of communication and transportation. Some rural people are farther in distance from a doctor than they used to be, but few, if any, are farther in time."

His survey indicated that there is hardly a village of 500 inhabitants in Minnesota without a doctor. Because of the difficulty of making a living in some locations, physicians are absent where formerly some were available.

Dr. Lyon's survey of medical education indicated that a doctor's education costs about $2,000 in excess of a high school teacher's education and requires two years longer in time. This is not considered excessive, in view of the physician's responsibilities. It was also his belief that the average graduate of 1925 is a better doctor than the graduate of 1905 but is not better than the people demand. M. F.



The Door in the Apple Tree

MIRIAM LE MAY

JIMMY BROWN was tired. He was sitting in the sun under the big apple tree in the yard thinking very hard. He had been through what he thought was a troublesome day. Maybe it was because vacation was over and school had begun once more, but at any rate, when he woke up that morning, Jimmy hated to get up, and he hated to brush his teeth and wash his face good and clean, "even behind the ears."

At breakfast, he had wanted to eat a big slice of pie that he saw in the cupboard, while his mother insisted that he should eat something good and wholesome like mush and toast. "Mush and toast," grumbled Jimmy, "you'd think all the healthy things in the world were made from mush and toast."

It seemed as if everything went wrong that day. He was sitting slouched at his desk when the teacher called on him to read, and she had asked him if he always sat slouched like that at home. Then at lunch time he had traded his meat sandwiches for a cream puff and some pickles, and something had hurt his stomach all afternoon.

Then when he reached home he did not change his clothes, but decided to play in his school ones, and had ripped a big three cornered tear on a rusty nail in the fence. His mother had called him in and sent his boy friends home, and here he was now under the apple tree thinking how cruel the world was to him.

It was warm in the sun and presently Jimmy saw a woodpecker busily picking at a limb in the apple tree. "He doesn't have to worry about school and washing his face and his clothes," thought Jimmy. "I wonder what he is trying to find in that limb?"

Just then Jimmy blinked his eyes in surprise. In the limb where the woodpecker had been picking, a little wooden door had swung open and out of it was coming the funniest parade you ever saw in your life.

First, there was the little clock which Jimmy recognized as the one which ticked merrily away on the shelf in his house. Next came a bar of soap and a towel, hand in hand. Then Jimmy's toothbrush danced into sight. After that came a piece of toast with a nice brown face, and right behind it a tall glass of milk.

Jimmy heard a quarreling sound and out of the little hole in the limb came a fat cream puff and a green pickle scratching and punching one another as they rolled in a tangled ball head over heels down the limb.

Jimmy was about to jump up and separate them when a rasping voice said, "Well, we are all here now, let's call the meeting to order."

Jimmy looked up and saw the rusty nail on which he had torn his school clothes limping out of the hole in the tree.

"Order, order!" cried the Toast and the Milk and the Toothbrush. The Cream Puff and the Pickle stopped quarreling and scrambled to their feet.

"What are we here for, anyway?" growled the Pickle?

"Just a minute and you shall see," rasped the Nail. "This boy Jimmy thinks the world is unkind and we are here to see if he is right."

"Well, I'm here to say this much," said the little Clock; "I work hard all day and all night keeping the hours and minutes straight for that boy Jimmy, and when it's time for him to get up, he acts as though it is my fault that he is lazy."

"And as for us," chimed in the Soap and Towel, "if Jimmy didn't use us every day he would be a sorry looking sight before long. And more than that, he doesn't know that it was we who came around and chased Gus Germ and several of his friends from behind his ears this morning.

"I helped too," added the Toothbrush. "I've saved that boy many a toothache, and I've helped keep his mouth clean and healthy so he could be happy."

"Well, we needn't say much," laughed the brown faced Toast and the glass of Milk, "everybody knows how useful we are in keeping people healthy and happy. But if Jimmy could only see all the strong men and boys that were raised on food like us he would be in a hurry to make friends with us. How he can eat some of the trash he does is beyond our knowledge!"

"I suppose you are referring to us," complained the Pickle, "You must admit we are all right at certain times and places. But, if foolish boys insist on putting things together that don't agree and swallowing things nearly whole, well, they have to take the results, that's all I've got to say."

"That's the way I feel," piped the Cream Puff, rubbing his head where the Pickle had bumped it hard.

"Tut, tut," said the Nail, "don't wail so much about it. Of course you are all right in your place. Now, take me for instance—every one knows how important a nail is. What would people do without them; how would they build houses? But, of course, if foolish boys insist on climbing over us with their new school clothes on, they have to take the consequences."

"Bravo!" chimed in the Clock and the Soap and the Towel and the Toothbrush. "We wish some one would tell Jimmy about this meeting."

"Well, how about Mr. Woodpecker, maybe he will," said the Nail, and he blew a little silver whistle. There was a flutter of wings and the Woodpecker flew down on the limb as the Nail and the Soap and Towel, and the Toothbrush and the Clock and the Cream Puff and Pickle all marched merrily back into the hole in the limb.

Jimmy started to get up to tell them that he had heard every word, when he bumped his elbow on the tree trunk and sat up rubbing his eyes, "Why I must have been asleep!" he

laughed. He looked up at the limb. Mr. Woodpecker was still busily at work, but there was no little door open in front of him.

"Well, Mr. Woodpecker, I'm glad I came here," said Jimmy, "I heard some interesting advice today."

The next morning when the little clock buzzed a merry alarm for him, Jimmy sprang right out of bed instead of waiting until the last minute. He could almost see the little clock winking at him as he pulled on his shoes.

The way he ran into the bathroom and washed his hands and face was certainly a surprise to his mother. Jimmy felt almost sure that he heard his toothbrush singing as he brushed his teeth.

He ate a big plate of mush and toast and felt so well that he whistled merrily all the way to school.

Somehow he didn't feel lazy that day. Perhaps it was because he decided not to trade his good lunch for foods like pickles and pastry.

Everything went right that day, and when Jimmy was bringing in the wood for the fire, he took a hammer and pulled the rusty nail out of the fence.

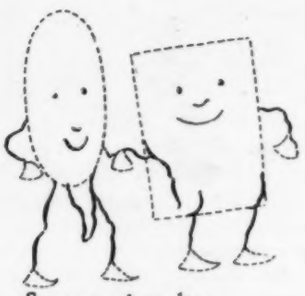
"I'm going to keep you to remind me of my funny dream under the apple tree," he laughed, as he put it in his bureau drawer.

That night, just before Jimmy trotted off to bed, he gave his mother a great, big hug and said, "This is one of the best days I have ever had."

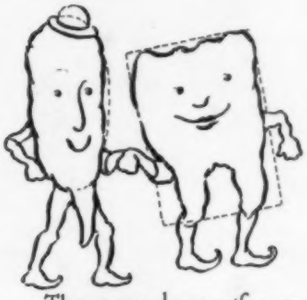
Some Little Friends of Yours

BY JOHN T. LEMOS

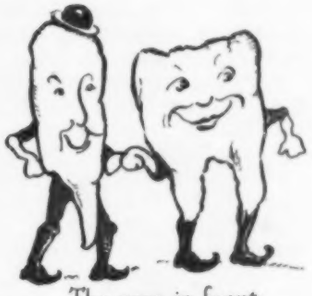
If you take good care of the Little White Soldiers in your mouth, they will more than repay you. Healthy teeth means happy smiles and good digestion. Read about the Tooth Brush Elf, then see if you can draw these pictures



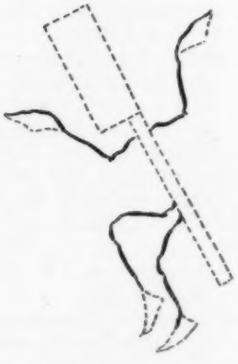
Some workers live
In Healthy Land,
Who like to travel
In a band.



They wear clean uniforms
Of white,
And want to do
Their work just right.



The ones in front
Are thin and long,
And those in back
Are wide and strong.



These little workers
Are our TEETH,
Who help to chew
The food we eat

And if we treat them
Half way right,
They'll work away
From morn till night.

One thing I'm sure
You know, yourself,
They like to see
The TOOTH BRUSH ELF!

For if he scrubs them
Twice a day
It keeps their troubles
All away.

But, if you make
Your tooth-brush wait
Those teeth wear out
And ache *and ache!*

But if you try to keep
Them clean
They shine and work
Like everything.

And when they're kept
Shined up in style
They line right up
And help you SMILE!

BOOK REVIEWS

RACE HYGIENE AND HEREDITY. By Hermann W. Siemens, M.D., of Munich. Translated and edited by Lewellys F. Barker, M.D. Pp. 78. Price $2. D. Appleton & Co. 1924.

THE author is a physician and biologist who strongly desires to make the world's future better than its past, whereas its future is likely to be worse because of the scarcity of children of good stock. He analyzes the causes of this, stating briefly, simply and clearly the biologic facts which prove that this must lead within a few generations to the deterioration of the race.

Dr. Siemens suggests two remedies: (1) education in biology and in the "high, extra-personal moral duty" of race and culture preservation; (2) biologically intelligent inheritance taxes and other taxes which recognize and encourage the greatest of all state service, namely, the production and education of children of good stock.

"Only after these requirements have been met can we finally be done with the cruel folly that, through laws which seem senseless to the biologist, exterminates the most valuable elements of our people," the author declares.

The book is sane and sound. Dr. Siemens has put the essential facts into a form intelligible to every one. Dr. Barker has made an excellent translation. These facts should be soberly considered by every intelligent citizen and especially by every educator and legislator.

B. C. H.

HYGIENE AND PUBLIC HEALTH. By George M. Price, M.D. Third Edition. Cloth. Pp. 294. No illustrations. Price $2.25. Lea & Febiger, Philadelphia. 1924.

THIS is a book covering many phases of public health, intended primarily for classroom use. Topics discussed include housing hygiene, child hygiene, school hygiene, industrial hygiene, water supplies, foods, milk supplies, disposal of wastes, public nuisances, prevention of infectious diseases, and federal hygiene. When a small volume of 300 pages covers such a variety of topics, the treatment of each must necessarily be brief.

"Hygiene and Public Health" shares the fault common to books of its type, in that its scope prohibits accuracy and its brevity is often misleading.

R. M. O.

WE AND OUR HEALTH. By George Payne. Illustrated by Mabel L. Jones. Book One. Published by The American Viewpoint Society, Inc., New York. 1924.

DISCUSSION of health through the means of fictitious characters, magic, or medieval stories is not one of the methods of E. George Payne, in his book "We and Our Health." He aims directly at the child. He assumes that the child will be naturally interested if his interest is aroused in his own physical welfare, and that no story is necessary to achieve that end. In other words, he works on the basis of the law of habit formation.

It is true that the things a child should know and practice in learning to be healthy are relatively few. Yet in striving to inculcate these few fundamental health activities to the point of automatic control, there is grave danger that children may be so nagged by direct commands and tiresome repetition that the goals of health teaching may be defeated.

Health may be either a duty or a game. Dr. Payne prefers to make it a duty. Forced routine may be perfectly all right, but it leads the reader to wonder how long the child will continue to do what he dislikes doing when the compulsion is removed.

The book is interestingly illustrated. The illustrations will appeal to children. Although the author makes clear the point that the book is written for the child, it seems to be better suited as a bit of supplementary reading for teacher or parent.

J. P.

HOME SEWAGE DISPOSAL. By William A. Hardenbergh. 27 illustrations. Price $3.50. Lippincott. 1924.

THE city dweller, as an individual, is free from certain problems and responsibilities which are often of vital importance to those who live in rural districts. The urban community usually furnishes a common water supply and a common means of collecting and disposing of household wastes. The country dweller and the resident on the outskirts of a city must grapple with these important problems and solve them for their own protection against the filth-borne diseases.

Human waste may contain the germs of typhoid fever, paratyphoid fevers or dysentery or the eggs of the hookworm. One method for protection against these and other filth diseases is by proper disposal of human waste material. Hardenbergh has brought together data on the methods available for such disposal, in a book entitled "Home Sewage Disposal." In certain states information on this subject is obtainable from state boards of health and it is always available through the U. S. Public Health Service, but this book not only furnishes sufficient information for choosing and constructing the best type for particular local conditions, but it explains clearly and correctly the reasons for effective disposal of wastes.

That the individual problem in this country is a large one is indicated by the statement that less than 40 per cent. of the population is provided with sewers and that in one section of the country in which a survey of 250,000 rural homes was made, more than one half had no means of disposing of human excreta —not even the ordinary privy.

The best method for disposal will depend on local conditions. Where running water is available the small septic tank is by far the most satisfactory. Where running water is not available the pit, box and can, concrete vault, chemical or septic privy may be installed. The selection from this list will depend on local conditions. In any case intelligent construction and operation are required to prevent access of flies or animals to the excreta, and to prevent soil and ground water pollution.

This book should be consulted by those obliged to solve the problems of waste disposal for a home.

J. F. N.

PHYSICAL DEVELOPMENTAL RECORD FOR MALES. Eugenics Record Office. 1924.

THE department of genetics of Carnegie Institution has prepared a special form to be used by parents in recording the physical development of their children, making a few simple measurements each month over a certain period of years, and agreeing to report annually to the Eugenics Record Office the results of the examinations. The record covers the period from three to twenty years of age.

HEALTH NEWS AND VIEWS

KEEPING CISTERN WATER PURE

Cistern water is thought by many persons to be comparable in purity with distilled water. To be sure the water as it leaves the clouds is apt to be safe and pure, but it is not necessarily in the same condition when it reaches the cistern.

All users of cistern water will be interested in the four rules for safeguarding cisterns laid down by the Louisiana state board of health in a recent bulletin. They are:

1. Cisterns should be tightly covered.
2. The inlet for water should be screened with copper or bronze wire, 18 meshes to the inch.
3. Cisterns should be provided with an arrangement, commonly called a cut-off, by which the first washings from the roof may be diverted to the ground and wasted, allowing water to enter the cistern only after the roof has been washed clean.
4. Cisterns, particularly if underground, should be watertight so that they cannot be contaminated by seepage water.

The normal position of the cut-off should be such as to divert the water to the ground. This is to avoid contaminating the supply by rains that occur during the night or when no one is about. The roof during dry weather is always contaminated by dust containing particles of animal wastes from roads, streets and barnyard, by bird droppings and even by human wastes from yard toilets.

IS WOMAN PROGRESSING OR DEGENERATING?

Much interest is being taken in England in Sir W. Arbuthnot Lane's criticism of modern woman and in the answer to his criticism by Winifred Cullis, first woman professor of physiology at the London School of Medicine for Women.

The London correspondent of *The Journal* of the American Medical Association quotes both critic and defender of modern woman.

Sir W. Arbuthnot Lane, writing for the press, says that the degeneration of women by civilization is a primary factor in developing cancer. He writes concerning the twentieth century woman:

"The poor, badly nourished thing has lost most of the normal physical characters which are such a marked feature in the magnificently built savage; her capacity to bear and produce children has become complicated by much trouble and innumerable sequelae which too often make life miserable; her sexual characters are very defective. She also is degenerating in size, so that the vast majority of her kind are puny and insignificant."

Women are unable to provide sufficient nourishment for their children and are obliged to fall back on the deleterious combinations provided for them by the food chemists, he says.

Their unfortunate children, deprived of suitable food, become constipated, and their tissues are devitalized by poisons absorbed from their intestines. Their teeth are consequently defective, and their noses and throats are invaded by organisms, producing adenoids, large tonsils and pyorrhea.

On the other hand, Lane praises the more primitive type:

"The typical negress is a magnificent animal. Her diet is simple but sufficient, and she produces vigorous offspring. Compare her with the miserable specimens whom you may see any day in Regent Street—bobbed-hair, puny, insignificant. Compared with the natives of West Africa members of our community are but emasculated shadows."

Prof. Winifred Cullis replies:

"Our women are progressing toward the truest and fullest womanhood. It is nonsense to say that the woman of today is degenerating physically or in any other way.

"My experience is that women and girls were never so fine physically as they are now. The women of 1925 are physically superior to the women of a quarter of a century ago, and are steadily improving in physique and healthfulness.

"Bad cases of anemia which used to be so frequent a few years ago have almost entirely disappeared. The principal reason is that women have learned to lead more natural and healthy lives.

"Their clothes are more sensible. Our grandmothers used to struggle inside high steel corsets, which gave them an amazingly narrow waistline and interfered with their breathing. Faintings and hysteria were common. If there are any deforming influences in the articles of attire worn by the women of today, they are nothing like so serious as they were twenty years ago.

"Rubber corsets do not interfere with respiration. Breathing is a vitally important point. The modern girl could not play tennis or hockey if she could not breathe.

"Another point is that the girl of today eats more than her grandmother did. In the old days it was considered not nice for a girl to eat heartily."

LEFT HANDED PERSONS NOT MENTALLY INFERIOR

To test out the belief, long held by some persons, that left handed persons are generally of inferior mentality, Dr. Kate Gorday, a Los Angeles psychologist, recently conducted some tests. Her conclusions were that such a belief is false.

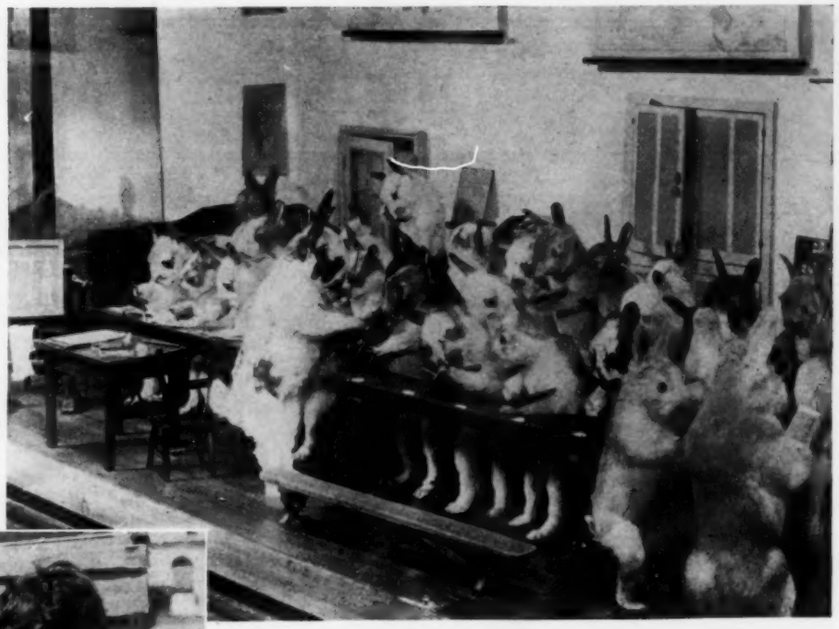
Dr. Gorday tested a group of 1019 school children, containing both right and left handed pupils. She did find that among subnormal individuals there is probably a large percentage of left handednesss. She also found that there are more left handed boys than girls, and that left handedness runs in families.

PREVENTING CANARY PNEUMONIA

Among scientific discoveries of recent months is a new means of preventing pneumonia among canaries.

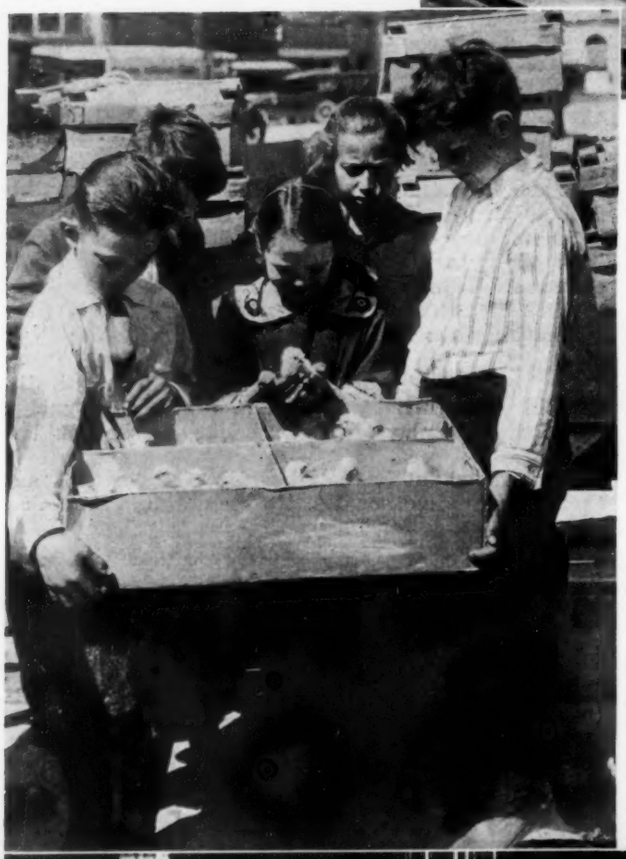
For many years, says *Science*, railway companies have been allowing claims on bird pets that died in transit. Railway express investigators have found that water from the drinking bowls in their cages has splashed out by the jolting of the train and got under the birds' feathers, causing them to catch cold.

Some bright person thought of the modern inkwell as a water fountain, and now the canaries can peck out the necessary moisture without fear of getting a cold shower.



EASTER BUNNIES IN SCHOOLROOM

Around Easter time, many English boys and girls will be flocking to the Children's Museum near the ruins of Bramber Castle, Sussex, to see these bunnies. They form a permanent exhibit in the museum, and are called by Mr. E. W. Collins, who arranged the group, "The Rabbits' Village School."

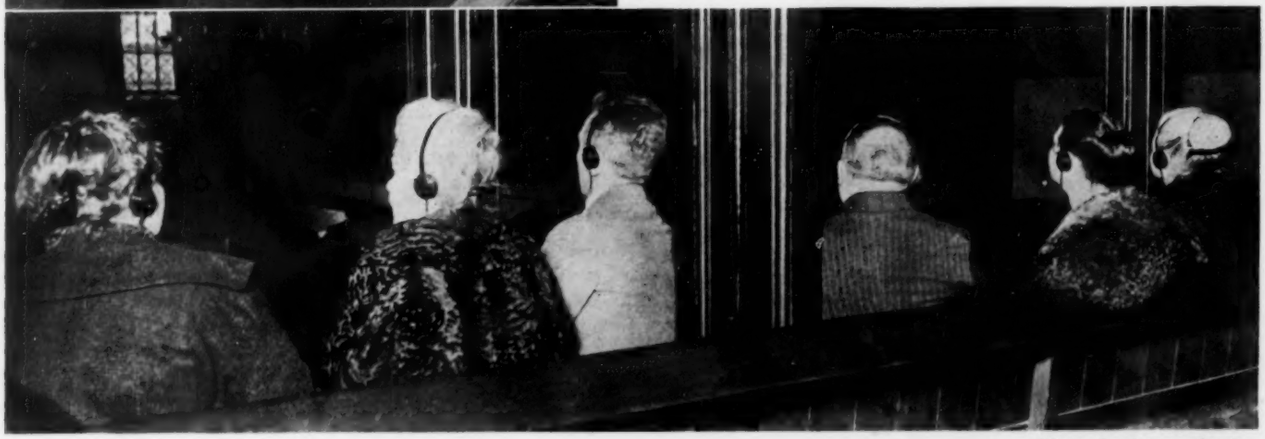


SCHOOL CHILDREN GIVEN BABY CHICKS

With all the fluffy yellowness displayed in this box of baby chicks, the school children of Petaluma, Calif., should have a happy Easter. The chickens are not an Easter gift, however, but a part of the schoolwork of these children. They are studying poultry raising, and the Petaluma chamber of commerce has presented them with 10,000 baby chicks on which to try out their new-found knowledge.

CAN NOW HEAR SERMON

St. John's Church in Berlin has recently installed an apparatus to aid members that are hard of hearing. A microphone is a part of the pulpit. Head sets are plugged in, and the handicapped have little difficulty in hearing the minister's voice.



Photos by International

Underwood & Underwood

RAISING A FEATHERED FAMILY

A San Francisco tom cat is raising a brood of chickens. They have adopted him and he has adopted them. The only time that Tommy objects to their attentions is when the chicks try to pick his shiny eyes.

PLANT A TREE ON APRIL 3

This is one of the last photographs taken of the late John Burroughs, beloved naturalist. His birthday is April 3 and on that day members of the American Tree Association and others who wish to beautify their homes and city and to honor a great man will plant a tree in his memory. The Tree Association itself has 70,000 members.

Photos by International

WILL YOU BE THIS SPRY AT EIGHTY?

Not many eighty year old men are as frisky as this Englishman, who is expressing his appreciation of a particularly good Rugby match by standing on his head.

FINDS HIGH SCHOOL STUDENTS SUPERSTITIOUS

High school pupils are steeped in superstitious beliefs, declares Dr. Isaac D. Rawlings, Illinois state health director, who bases his opinion on a survey recently completed by a member of the Illinois State Academy of Science.

Ten obsolete, traditional notions, long since exploded and discredited by scientific observation, were put to 1,581 pupils in thirty-five high schools of Illinois, Indiana, Kentucky and Tennessee in the form of questions. From 2 to 60 per cent. of the pupils expressed a positive belief in the various notions, the faculties of two modern high schools near Chicago requesting that the names of their schools be omitted from publicity in order to avoid embarrassment.

"The survey showed," said Dr. Rawlings, "that 19 per cent. of the pupils believe that a 'mad stone' will prevent hydrophobia if applied to a wound created by the bite of a rabid dog; 26 per cent. believe that warts can be removed from the hands through a series of mysterious maneuvers on the part of certain persons called charmers; 60 per cent. believe that malaria is caused by drinking stagnant or swampy water contaminated in some mysterious way; 23 per cent. believe that a horse hair, when left in a watering trough or swallowed, will be converted into a snake-like, disease-producing worm. Other questions related to hoop snakes, the influence of moon on vegetable growth, the comparative number of ribs in man and women and similar superstitions.

"Doubtless a number of the pupils still believe in a red flannel undershirt and a string of asafetida about the neck as a preventive of disease, the rabbit foot and horse shoe as good luck charms and the signs of the zodiac as exercising a fateful influence over animal life. These beliefs have come to the youth through the teachings of tradition. Certainly we cannot expect to go very far with individual health promoting measures with those persons whose minds are filled with such primitive notions about cause and effect.

"The superstitious and the mentally lazy are the victims upon whom quacks and nostrum venders fatten. People who expose themselves to the most primary knowledge about biology, chemistry and medicine are too wise to part with good money in return for quackery and 'cure-all' nostrums."

STUDIES DREAMS OF ORPHANS

When an orphan sleeps, he is most apt to dream of mother, father, home or foster parents who have come to take him away from the institution.

At least that is what Dr. Kate Gordon of the University of Southern California found when she studied the dreams of more than 100 orphans in institutions.

The results of Dr. Gordon's survey seem to support the contention of psychanalysts that persons live out in dreams the wishes that are unfulfilled in reality.

Eighty of the children studied admitted dreaming and the dreams of fully half of this number were about home and parents. Another 16 per cent. dreamed of fears, such as of tonsil operations. Eight out of the number dreamed of toys, candy and money, and a lesser number dreamed of religion.

SAYS FINGER PRINTS ARE INHERITED

A woman scientist of Oslo, Norway—Mlle. Kristine Bonnevie of Royal Frederik University—has just completed an exhaustive study of finger print records of the Oslo court of justice. She finds that finger prints are hereditary.

One's distinctive pattern is like that of one's parents and will be passed on to future generations with relatively little change, says *Science* in reporting the discovery.

Mlle. Bonnevie found a resemblance between the finger print types of related races, the nearer the relationship the closer the resemblance. She also learned that the finger prints of apes follow the same rule of kinship.

TO TREAT MENTAL DISEASE AMONG SING SING PRISONERS

Sing Sing prison will establish a psychiatric clinic to study each prisoner that enters its walls, it has been decided. The subnormal will be segregated from the normal and kept under state control.

Ten thousand criminal delinquents in prisons, reform schools and on probation have been examined by the National Committee for Mental Hygiene and more than half of them have been found to be mentally diseased, feebleminded or otherwise abnormal mentally.

The majority of persons in state and federal prisons are repeaters, it has been proved, and little effort has been made to understand their behavior and to prescribe adequate rehabilitative measures.

Of 608 prisoners admitted to Sing Sing in a given period, 66.8 per cent. were found to have previously served sentences in one or more penal institutions.

IF CHILDREN HAVE BEEN EXPOSED TO SCARLET FEVER

Billy has scarlet fever. The rest of the children have been exposed. What is the best thing for the parents to do?

The Detroit health department says that Billy should be sent to the hospital, if possible. If not, the other children had better be sent to the home of a relative or friend. If the other children are quarantined in the home with Billy, the chances are greatest for contracting the disease.

If Billy is sent to the hospital, the other children's chances of developing scarlet fever are lessened by 60 per cent. If they go to live with a friend, their chances are 43 per cent. less than if they remained at home with Billy, health workers have figured out.

TRACE TYPHOID CASES TO WAITRESS

Florida was probably saved a number of cases of typhoid fever when a district state health officer of New York found a hotel waitress to be a typhoid carrier.

Three cases of typhoid fever occurred among guests at a hotel in southern New York state, and health authorities traced the disease to a waitress who had been employed only a month previous to the onset of the cases.

When the woman was interviewed it was found that she was about to take a train for Florida where she had been engaged as a waitress for the winter. Health authorities of Florida were notified. The woman declared that neither she nor any member of her family had ever had typhoid fever.

TENEMENT CHILDREN DO HOME WORK

Child labor was found to prevail in one fourth of the 15,000 houses licensed to engage in home work in New York state, according to the 1924 report of the New York state commission to examine laws relating to child welfare.

The commission made an extensive study during 1924 of tenement manufacturing. Its report states: "Children of tender years—many of them under 10 years of age—are commonly permitted or required to engage in this work."

QUESTIONS AND ANSWERS

If you have a question relating to health, write to "Questions and Answers," HYGEIA, enclosing a two-cent stamp. If the question is of general interest, the answer will be published; otherwise it will be sent by mail. Questions are submitted to recognized authorities in the several branches of medicine and answers framed by them. The names of correspondents will not be published. Diagnoses in individual cases will not be attempted nor treatment prescribed. Answers to questions relating to beauty will be found in the "Healthful Beauty" department of this magazine.

Proper Posture

To the Editor:—1. Can anything be done to correct shoulder blades that protrude somewhat? 2. Is a curved back as opposed to the army's ideal of a flat back necessarily undesirable? 3. Can you recommend a book giving the points of a physically perfect body and exercises for developing the body? R. B. L., Minnesota.

Answer.—1. Properly devised exercises and methods of posing, preferably so the back can be seen in a mirror, if faithfully carried out, will accomplish all that can be done by individual effort to correct protruding shoulder blades.

The assistance of a good trainer or physiotherapist, as they are now generally called, should greatly enhance the result. If deformities of the back or shoulder girdle or paralysis of muscles are present, they may seriously interfere with relief. A good physical examination by a competent physician is a necessary preliminary to an intelligent effort at correction.

2. A curved back when not diseased or too far from the physiologic limit may be quite as efficient as the "army" type.

3. "Exercise in Education and Medicine" by McKenzie, published by W. B. Saunders & Co., Philadelphia, is a suitable book for the purpose.

Removal of Breasts

To the Editor:—A young woman, otherwise in practically perfect health, at the age of 29 had one breast removed because of a growth which it was feared might become cancer. Two years later the other breast was removed. Laboratory analysis showed "very early stage of adeno-carcinoma." Not quite two years after the second operation she married. Would the loss of her breasts in any way affect the possibility or probability of her having children? Would a rather scant menstrual flow indicate any condition affecting the probability of her having children? G. E. R., Mississippi.

Answer.—The loss of the breasts should not affect the possibility or probability of pregnancy and childbirth.

A scanty menstrual flow does not necessarily indicate a condition affecting the probability of conception.

Mouth Breathing

To the Editor:—My little daughter, 8 years old, has a habit of sleeping with her mouth open. We have had her adenoids and tonsils removed but this does not seem to change the condition. I have seen somewhere an advertisement of a chin strap to take care of this matter and will appreciate it very much if you can give me the name and address of the company that makes it, provided you think this a good thing to use. If you do not approve of this, will you kindly advise me what I can do for her so that she will stop this mouth breathing. W. L. D., New Jersey.

Answer.—Following the removal of tonsils and adenoids, children usually continue to breathe through the mouth for a time. Continued mouth breathing suggests some obstruction of the nasal air passages. Adenoids frequently recur and will cause a continuation of mouth breathing, or a chronic nasal or sinus infection may be the cause of the obstruction. A reexamination should be made by a physician.

As to the chin strap, unless the nasal passages are clear no beneficial effect could be brought about. If there is no obstruction, the chin strap is not needed as there will be a gradual return to normal breathing. Such straps may cause discomfort and make a child restless and irritable without bringing about the desired result.

Transmitting Syphilis

To the Editor:—Several years ago a young woman was married to a man who had syphilis. They lived together for several years, but had no children for this reason. About a year ago he died in an insane asylum. 1. Is it possible that the woman can carry the germs of this disease? 2. Would there be any danger of her communicating it to another should she marry again? 3. Would it be possible for any children born to their union to be affected? L. L., Texas.

Answer.—Assuming that the woman has not had suitable treatment:

1. Yes, if infected and not satisfactorily treated, the woman still harbors the germ of syphilis.

2. Yes.

3. Yes.

Whether or not she married again, she should have expert examination and advice to protect her own body from the ravages of unrecognized syphilis. This would also protect from infection, her second husband and any children that might result from the marriage.

Puffs under Eyes

To the Editor:—Could you tell me just what causes me to have puffs under my eyes every morning? Sometimes they appear as heavy bags, and again as a slight puffiness. Toward noon they are almost gone except for a little swelling, which never goes away. I have suspected kidney trouble, for I get a pain between my shoulders if I go downtown and stand around much. I have been told I do not drink enough water (usually two or three glasses a day), and also that I eat too much acid. I am 15 years old. T. N. P., Ohio.

Answer.—Pain between the shoulders or over the kidney region usually is not due to kidney disease but to muscular or nerve pain or soreness. However, a physician should seek other kidney symptoms such as swelling of the ankles, night urination, pallor and headache.

Most frequently puffiness under the eyes is due to fatigue or the absorption of poison from some source of infection such as tonsils, sinuses, or less often from intestinal absorption. This poisoning leads to low blood pressure, which results in poor circulation to the tissues, poor nourishment and oxygen supply, and manifests itself by lack of energy, especially in the morning, and lack of endurance.

Sometimes such bodily conditions come in young, rapidly growing people without the presence of any infection, and there may even be albumin in the urine without denoting actual kidney disease. There should be a careful physical examination, including heart, urine and blood pressure, to eliminate the possibility of nephritis. Infections should be removed or treated and diet should include plenty of fruits and vegetables, meat once a day and at least two quarts of water a day. One should get nine hours sleep. A cool (not cold) bath in the morning and an examination of the eyes for errors of refraction are recommended.

Enlarged Pores

To the Editor:—I have been using Pond's cold cream to cleanse my face, and Pond's vanishing cream as a base for powder. I find that my pores are becoming enlarged. Is it due to the use of vanishing cream? Would a good facial soap and some kind of base for powder be a better way to cleanse my face? I. L., Illinois.

Answer.—In general, it is not advisable to use toilet preparations with a greasy base when there is any tendency to enlargement of the pores. Washing the face with soap and water, preferably not a "medicated" soap, is a better method of cleaning it. Any satisfactory powder may be used, but no greasy base for its application should be employed.

Movies and Eyestrain

To the Editor:—I have noticed at our local movie show that all the children pile up in the front seats of the theater. The screen is not more than 15 or 20 feet from the front seats, if that much. I know I cannot look at a picture at that distance without straining my eyes. Kindly inform me if this straining is general. If sitting so close to a screen strains the eyes it seems to me that some law should be passed preventing persons, especially children, from occupying those seats. This custom of the kiddies grabbing the front seats is general, that is, in all the shows in small towns where the children often go to the movies unaccompanied by grown-ups. Please advise.

P. H. F., Louisiana.

Answer.—Motion pictures sometimes make the eyes ache and the eyes and lids red and irritable. Those who suffer most in this respect are persons who have defective eyes and are not fitted with proper glasses, and those who use their eyes under any circumstances at the expense of some strain. If, however, the lighting conditions are bad, or the picture is unsteady or is shown too rapidly, any one's eyes, no matter how nearly perfect, may be severely tried.

Bad ventilation is no doubt a contributing factor in the causation of "movie headache." It may also contribute to other symptoms of eyestrain by its generally depressing effect. Eyestrain deserves more consideration in the case of children, because of the plastic condition of the tissues of the growing child and the danger of the production or increase of myopia or near sightedness.

All children who have red eyes or complain of headaches during or after attendance upon the movies should have a careful examination of the eyes. Inquiry will probably develop the fact that some symptoms of eyestrain occur after much reading, motoring or exposure to any strong light. If glasses are needed for any purpose they should be worn at the movies and it is a good plan to close the eyes if the picture is unsteady or shown so rapidly as to cause distress.

There is much room for improvement of conditions even in our best theaters. It has been demonstrated that darkness such as we usually find in the movie theater is not necessary to the successful showing of the pictures. The front part of the theater near the screen should be dark. If the light were increased gradually from the front to the back part of the theater it would be much easier for the observers and the visual result would be just as satisfactory. While such lighting is more difficult of accomplishment as the theaters are now arranged, it can be done.

Those whose eyes are sensitive and who suffer at the movies should avoid sitting too near the screen. If one's vision is good the further one sits from the screen the less the eyes will be strained by any unsteadiness or imperfection in the showing of the picture or by the strong light. All who have been obliged to sit in the front seats must have noticed that the glare is more tiring, and that any lack of steadiness is exaggerated, requiring more constant adjustment of the eyes, thus producing greater muscle fatigue.

Diabetes

To the Editor:—I have had diabetes for two years and am now 21. I am on a diet of 90 grams carbohydrates, 70 grams protein and 210 fat. I do not take insulin but keep my blood sugar down to about normal. After dieting for several years, will there be any chance for my condition to be outgrown or improved? If a diabetic can keep sugar free, will his life be just as long as if this condition did not exist? W. C., Indiana.

Answer.—If this inquirer can remain on the diet mentioned day after day and show no abnormal quantity of sugar in the urine, she thereby demonstrates her power at the present time to utilize completely at least 152 grams of glucose per day.

This is a comfortable sugar burning power and if she never has less she will never need any artificially administered insulin. She does not state her body weight, but the above would be true even if she weighed as much as 160 to 165 lbs. If she has a true diabetes mellitus, it is not far advanced at this time.

The inquirer wishes to know whether, if she keeps the urine constantly sugar free by dieting, there will be any chance of her having a full normal expectancy of life, of maintaining her present condition, or of improving her power to burn glucose.

The letter does not give enough information to enable one to state whether in her particular case these things may be expected. In the first place the proof that she has a true diabetes mellitus is not presented. One must take her word that she has a true diabetes mellitus, not some other anomaly of the metabolism. The age of the patient is given as 21 years and the duration of the disease as two years so that it began at the age of 19.

Cases of true diabetes mellitus beginning as early as this one almost invariably show a more or less rapid decline of tolerance as time goes on regardless of whether they are held constantly sugar free or not. This decline may be greatly retarded in many cases by appropriate treatment, but it would not be honest to tell a young diabetic patient that the disease itself can be cured or permanently arrested by any form of treatment known to the medical profession today. On the other hand, no matter how low the natural tolerance may sink, life, health and the power to work and enjoy life indefinitely may be vouchsafed any patient, even to the full normal expectancy of life, thanks to the advent of insulin.

The course of true diabetes mellitus is capable of being influenced by many factors besides diet, especially nervous, emotional and infectious factors and intercurrent illnesses. No general rule can be made to cover all cases. In general, it may be said that a true diabetes mellitus occurring in a child, a youth, or a young adult, and one that has already existed for a long enough time to prove its true nature (i. e.,

several months, or a year or more), may be held in abeyance by diet management alone for a time, sometimes weeks, sometimes months, sometimes a year or two. But in the genuine disease the power to produce insulin tends to fall off until at some time it falls so low that insulin must be given artificially, if the patient is to remain strong and well nourished.

It makes a great deal of difference whether the disease first appears in the forenoon, the noonday, or the afternoon of life. The earlier it develops, the more likely it is to show downward progress, the later it develops the more likely it is to remain stationary or to improve. If it first appears after 50 to 55 it usually proves itself mild and slowly progressive, or not progressive at all.

X-ray and Tumors

To the Editor:—Will you please explain the mode of action of the x-ray treatment when used on tumors? What causes the tumor to absorb? I am greatly interested in the scientific action of the x-ray on tumors. I have been taking x-ray treatments for a tumor on the right side of the pelvis. It has helped me much and my doctor advises me to take more treatments, which I am perfectly willing to do. Just as in taking medicine, I know it helps me when the doctor tell me what drug he is prescribing, and what action he expects it to bring about, so with the x-ray I am sure it will have, or tend to have, a more beneficial effect if I understand just what action is going on.

F. S. C., Iowa.

Answer.—The present opinion as to the action of x-rays on tumor cells is that there is a direct killing action on the cells themselves and a secondary starvation action plus an arrest of the flow in the lymphatic vessels in the region treated.

All malignant tumors have a large number of cells of a young type which multiply rapidly and perhaps never show the appearance under the microscope of mature cells. These young cells are more unstable than the mature cells and when acted on by a proper dose of x-rays are actually broken down before the normal cells. The trick of the application is to take advantage of the difference in sensitiveness to the x-ray, and give a dose that will kill the tumor cells and only perhaps stimulate the normal.

One secondary manner of affecting tumor by x-rays is by the production of inflammation in the lining walls of the very finest blood vessels. This diminishes the blood flow to the tumor cells and virtually starves them.

Repeated x-ray doses also act in this manner on the lymphatic channels and as cancer spreads mainly by the lymph vessels its extension to adjacent tissues is more or less blocked.

Red Noses

To the Editor:—Have you any suggestions to offer for a condition of red nose that has existed for years. I am in perfect health, my digestion is good and I can think of no reason for such a condition.

A. P. H., New York.

Answer.—The chronic condition described is called rosacea. It usually begins a decade or more after adolescence. Although its favorite site is the nose, it commonly affects the cheeks, forehead and chin. Less commonly it is seen elsewhere on the face. It begins as a congestion of the parts, at first more or less transient, but later becoming persistent. This congestion is usually most marked after eating, nervous strain, physical exertion or hot bathing. In women it is also aggravated by the menstrual period.

The dilated capillaries, which cause the initial redness, later tend to become more enlarged and incapable of contraction, at which time visible vessels make their appearance. Usually pimples and excessive oiliness of the face are associated with this disorder. In rare instances the nose becomes enlarged in the late stage.

As to treatment, one should avoid overeating and hot bathing and should protect the face against external irritants such as sun, wind, cold and soaps. Stimulating drinks, such as alcohol, tea and coffee should be avoided. (Rosacea has been popularly referred to as the whisky or beer drinker's nose.) Highly seasoned articles of diet and indigestible foods are to be avoided. Pastries and sweets, as well as meats, should be taken only in moderation.

Any tendency toward constipation should be corrected with diet if possible. For general bathing, as well as for use on the face, cool or tepid water should be employed. It is highly advisable that individuals so afflicted take, in addition to the cleansing bath, a cold bath each morning.

A physician should be consulted if the above mentioned measures, together with the local application at night of a simple ointment, does not improve the condition. X-ray treatments are useful in obstinate cases. This measure should be carried out only by one skilled in treating the skin with x-rays.

Colic

To the Editor:—I wish you could advise me about my baby, now seven weeks old, who is constipated and has colic. Three or four times a day, right after nursing, he cries and writhes as if in agony, sometimes for a whole hour. His little hands are clenched and he almost has spasms. The bowel movements are pale yellow in color but solid and not soft or semiliquid as it seems they should be. We have tried everything we can think of without avail. He weighs seven pounds, which is the same as he weighed when he was born. Should he not have gained in weight by this time? We are located where it is difficult to get to a doctor and no one else near by seems to know much about babies. How can we tell if the breast milk the baby gets is not enough and what should we give him in addition to the breast milk if that becomes necessary?

W. M. B., Arizona.

Answer.—The earliest, most frequent and often most obstinate complaint in the young, breast-fed infant is colic. It is usually due to overfeeding, sucking of air while nursing, irregular nursing hours, nursing too frequently or too long.

Infants with colic should be weighed on accurate scales before and after nursing and weighed without clothes at least once a week. One colicky baby may get only an ounce in twenty minutes while another may get six ounces in that time. In the former case the child sucks and swallows air which causes distress, in the latter case the excess of food forms and causes gas and distention.

If the child does not get enough from the breast a properly prepared mixture should be given just after each or several nursings. If the child is overnursed, then one ounce of saccharin water may be given just before the nursing and the period at the breast shortened to five or ten minutes. Suppositories, enemas, peppermint, soda, paragoric, walking the floor, hot water bottles and pacifiers, may temporarily quiet the child but they have very little permanent results in curing and if primarily resorted to may do more harm than good.

The average child of seven pounds should be given six nursings in twenty-four hours. Infants under this weight should be given no more than seven feedings in twenty-four hours. The young infant should gain five to eight ounces a week (not more or less). He should get two times as many ounces of breast milk in twenty-four hours as he weighs pounds, i. e., a seven pound baby should get about fourteen ounces in twenty-four hours, or two and one-half ounces in six nursings. The best way to cure colic is to prevent it.

CURRENT HEALTH ITEMS

CAN'T JUDGE INTELLIGENCE FROM PHOTOGRAPH

Can you "size up" a person by his looks?

Most persons think they can tell something of another's intelligence by a study of his facial contour and expression. The school superintendent demands a picture of the applicants for positions in the public schools. No picture, no job.

Profs. Donald A. Laird and Herman Remmers of Colgate University have made a scientific study of estimates of intelligence from photographs, the results of which are published in a recent issue of the *Journal of Experimental Psychology.*

Uniform photographs of ten college students, such as a school board, the civil service or any prospective employer receives from its applicants, were given to 376 individuals, who attempted to "size up" the relative intelligence of the students.

Objective measures of the intelligence of the ten students had been obtained from the Thorndike intelligence test for high school graduates.

The scientists report the following results:

1. The individuals attempting to arrange the pictures of ten persons according to intelligence could have done as well with their eyes closed as with them open.
2. Any success better than this is due to luck, as was shown by having those who did well on one set of ten arrange another set, whereupon their apparent better abilities disappeared.
3. Women are no better at judging relative intelligence from photographs than are men.
4. Older persons have no better abilities in this direction than the young.
5. The more intelligent have no better abilities in this direction than persons with less intelligence.
6. There was a very slight tendency for both men and women to overestimate the intelligence of women from their photographs.
7. The ability to estimate intelligence in this way is lessened when the pictures are not uniform.
8. In judging two pictures, as in judging ten, one might as well close the eyes.
9. A group of two, four or five judges working together do no better than a single judge arranging the pictures by himself.
10. One professional "character reader and vocational expert" did no better than the average of the 376 persons studied in arranging the pictures.

DOES "NERVES" GO WITH LIMOUSINES?

"Let them go to work; that will cure them."

"I didn't have nerves when I was young."

"We never even heard of nerves in my day; we had to get out and hustle, we did."

Thus do persons of righteous conscience, through snap judgments, make short despatch of the complex problems of the sociologist and psychiatrist, says *Mental Health,* the publication of the Mental Hygiene Society of Maryland.

Very often do we hear persons remark, says the bulletin, that "they have no time for nerves."

Their position rests apparently on the view that nervous conditions require leisure. They assume a fatal connection between neurasthenia and luxury. In their minds nervous prostration is inevitably linked with limousines, boudoirs and a box at the opera.

This unenlightened attitude is deplorable, the mental hygienist thinks, and it unfortunately is held by many persumably educated and cultured persons.

Such persons do not reckon with the class of people whom circumstance has impaneled into an unremitting routine of hard daily labor. As if the overtaxed working woman, bending hourly under the burden of household chores and encumbered with a yearly increasing contingent of ill-nourished children, were not also to be rated high among those with insanity!

GERMAN CHILDREN LACK PROPER FOOD AND SHELTER

How economic conditions are affecting child health in Germany is revealed in a recent survey of school children in the small industrial town of Weissenfels. Results of the survey are published in the bulletin of L'Union Internationale de Secours aux Enfants.

Of the 614 children in the elementary schools of Weissenfels, 100 were the children of unemployed fathers and twenty of partially employed fathers.

Salaries of working fathers varied from eight to twenty marks a week.

18 children had brought no lunch with them.
115 children came to school without breakfast.
35 children had no dinner.
38 children were out-patients of a tuberculosis clinic.
3 families lived in a single room each.
84 children lived in a tenement of two rooms.
266 children lived in homes of three rooms.
In 79 cases the family slept in two beds.
61 girls slept in the same bed as the boys.
40 families had night-lodgers.

In four cases 9 persons slept in one room, in eleven cases 8, in fifteen cases 7, and in forty-three cases 6 slept in one room.

The official report further states that thousands of babies are fed on inappropriate foods, including coffee, potatoes, beans, bread and herring.

In many instances healthy persons were compelled to sleep in the same bed with tuberculous persons.

BREAKING THE INSOMNIA HABIT

Sunlight, fresh air and occupational interest are essential for the cure of the habit of sleeplessness, according to Sir Frederick Mott in *The Lancet.*

Recreation that is meant to correct sleeplessness should require a continuous series of fresh mental adjustments and leave little time for introspection. Golf is better than walking, tennis or physical work than fishing, for in walking and fishing there is nothing to break the train of anxious thought.

Worry and not overwork is the chief cause of insomnia, Sir Frederick declares. Whatever the exciting cause, there is always in the victim a fixed belief that he will not sleep.

As soon as sleeplessness becomes habitual, trifling troubles are magnified and cause depression. It is necessary to take early measures to prevent habitual sleeplessness, even if one has to start with drugs. No drug should even be self-prescribed or self-administered, concludes Sir. Frederick.